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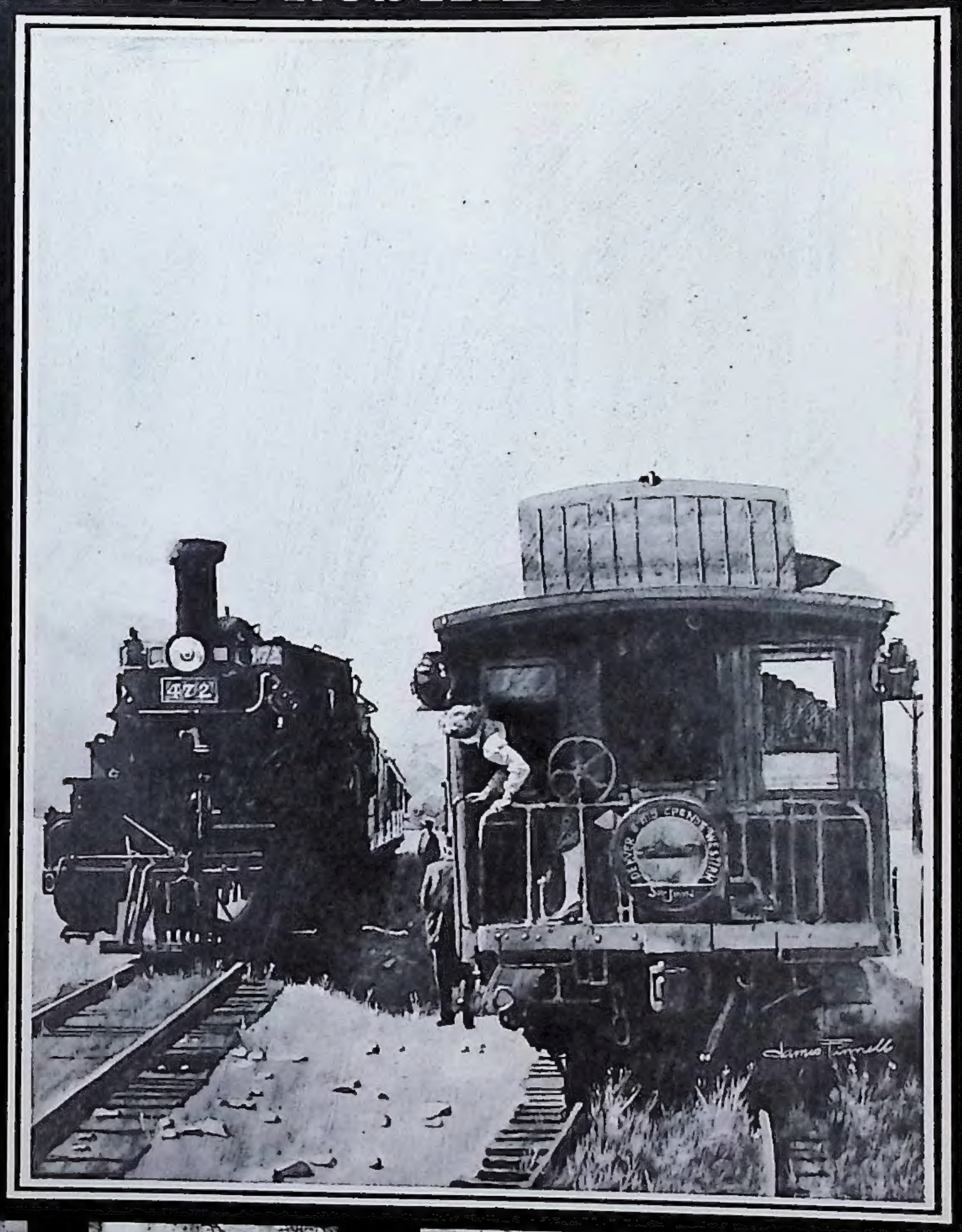

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THIS MONTH'S COVER

It takes the likes of a Santa Fe to come up with a paint scheme capable of withstanding millions of miles and still looking like a million dollars. Exhibit A: two tired but beautiful F's at San Diego, California. Photo by David Lustig.

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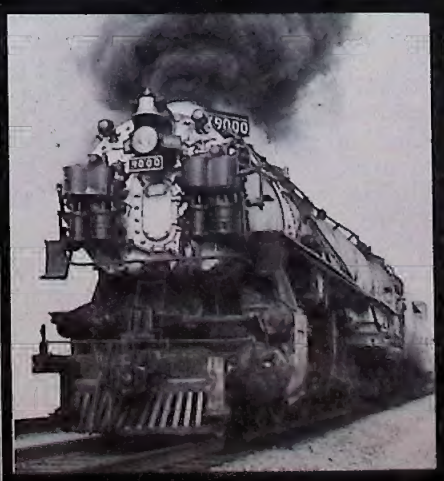

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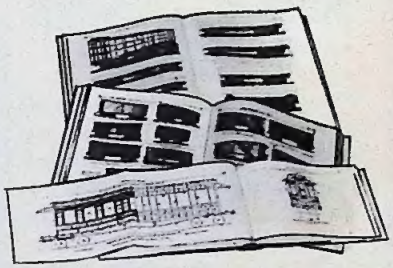

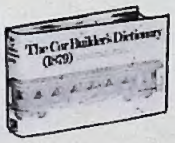

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RAIL MAIL

MORE ON WALES NARROW GAUGE

I have just finished enjoying **Rail Classics,** Vol. 1, No. 2, and I thought I would write to tell you how good I think the magazine is. I particularly enjoy the article on North Wales Narrow Gauge lines and I hope Mr. Brown will not mind if I clarify a few points.

Vale of Rheidol—There are three 2-6-2-T's, not five. Number 9 built to a Davies and Metcalfe design in 1902. Seven and eight were built in 1923 by CWR at Swindon to the same design.

Tahyllyn Railway—In addition the railway proper, there is a narrow gauge museum at Towyn containing seven or eight preserved locomotives in addition to other items of interest. Festimog Railway—Largely run by professionals. The enthusiasts who saved the line and revived it are now only allowed to do the more menial tasks such as track work. The locomotives are progressively being converted to oil firing, only the Fairlie being coal fired last year.

Snowden Mountain Railway—I am sorry Mr. Brown did not make this trip. The railway as he says is usually crowded and the fare is very expensive but cog railways are expensive to maintain and the scenery is wonderful. Even better for the enthusiast when those tanks open up, there is nothing "narrow gauge" about the sound they make.

The Welshpool and Llanfous—The two Beyer-Peacock locos are in fact 0-6-0T's not 2-4-0's. One is painted green and one black.

If any of your readers are coming to Britain and intending to make a search for steam, I would advise them not to ignore the standard gauge lines that are preserved. Lines like the Severn Valley and the Worth Valley and centers like Tyesby and Steamtown Crowforth are well worth a visit. The Worth Valley for example has over 30 locomotives on the property.

Meanwhile, keep up the good work, I look forward to the next addition.

Ron Smith
Essex, England

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"A Guide to Night Photography"

(Text continued on page 82)

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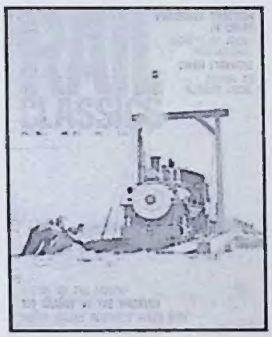

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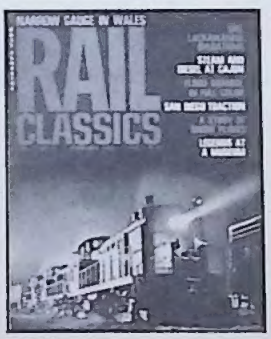

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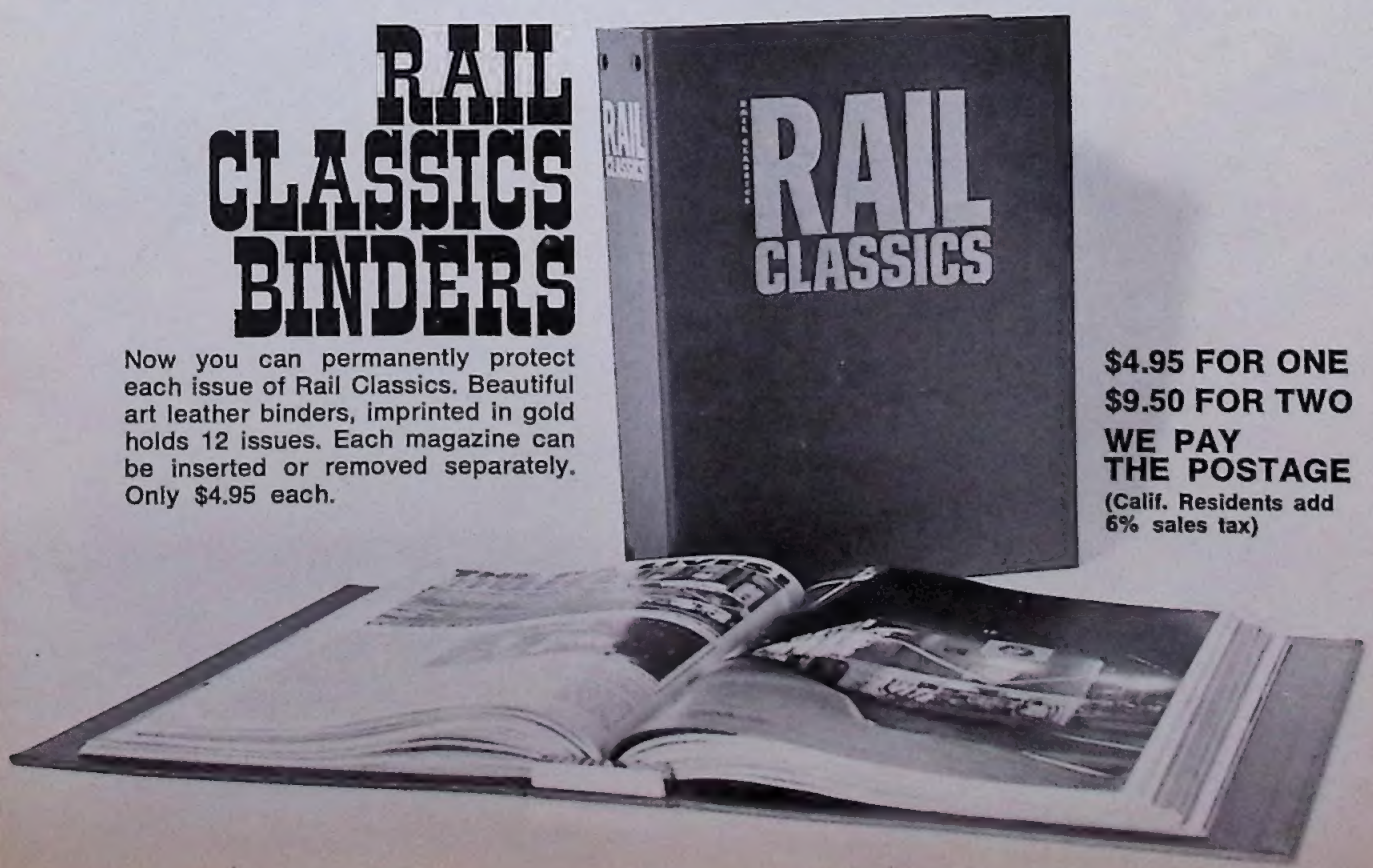

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Such is the case of this issue's Trona Railway piece. When parallel roads weren't parallel anymore, we took to motorcycles. On a recent expedition to Sp's Cascade line in northern California, it was hiking boots and parkas. To gather information on Amtrak for a future story, it was sport shirts and slacks on the Super Chief/El Capitan, roaming everywhere, from discussions with the engine crews, conductors and porters to passengers, covering engine cab to marker lights, and everything in between, not just the lounge.

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COPY 19

BY DAVID LUSTIG

No hobby has more eagle-eyed readers than those who call themselves railfans. When a mistake is made, watch out.

Case in point; last issue's statement that Trona's center-cabs were the last operating units of their type. The day after the August issue was put to bed, we discovered that, indeed, the pair was not the last, but the 75 mile Minneapolis, Northfield and Southern, a shortline in Minnesota, holds that distinction with the operation of center-cab 21. Thank you all who have diligently pointed that fact out to us and to George A. Forero, Jr., for his April 1973 photo of two rarities in one photograph: MN&S's still operating center-cab and Soo Line 415, one of only a handful of Alco RS27's built, of which the Soo owns two. By the way, Soo Line operated a quartet of Baldwin center-cabs themselves at one time.

Also, I would like to take this time to thank all of you who have contributed color prints to *Rail Classics*. Unfortunately, our color reproduction is done from color transparencies only, and we cannot use color prints or negatives. Transparencies submitted to us should carry your name and address on each one, plus a description of the scene or caption on a separate piece of paper, also bearing your name and address.

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We're always glad to review unsolicited manuscripts and photos, however, on larger pieces of work, it would be better to query us first. We'll answer promptly, but remember, publication cannot be guaranteed, or a decision made as to the use of it until we have a chance to review the material.

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Oh yes, one more thing, all submissions should include a stamped-self-addressed envelope in case we cannot use the material. We cannot return material sent to us without it.

So there's our ground rules, gentlemen. We can use only a fraction of what is submitted and the chances are high for a rejection slip, but keep on trying, we'd like nothing better then to mail you a contributor's check.

Any takers?

The narrow gauge mixed train is still going st

TRAIN TIME AT SITTO

BY MALLORY HOPE FERRELL

Photos by the author except as noted

Twice each day at the tiny village of Sitto del Nino, El Salvador, the most exciting steam show in all of Central America takes place as three trains arrive and depart at the same time from three different directions.

The Ferrocarril de El Salvador is still all steam, three foot gauge and link and pin equipped. Motive power consists of 1890 Baldwin ten-wheelers and a stable of outside frame consolidations. The car roster boasts of ancient Carter Brothers passenger cars and other rolling stock that once saw service in Hawaii.

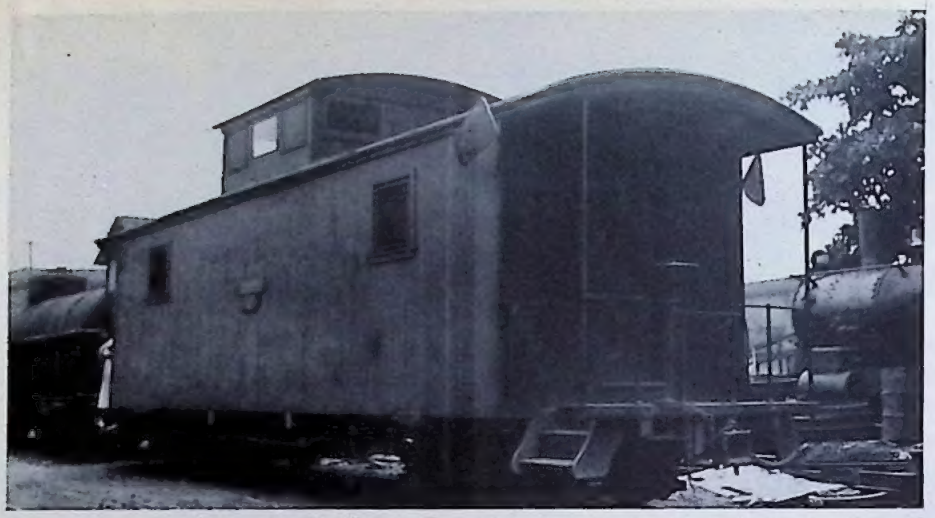
The Ferrocarril de El Salvador (F. E. S.) runs from San Salvador, the capital city, to the Pacific Coast port of Acajutla. At Sitto del Nino, a branch line to Santa Ana connects with the equally narrow gauge Ferrocarril International de Central America, which is the El Salvador trackage of the former International Railways of Central America (I. R. C. A.) in Guatemala. The I. R. C. A. was taken over by the Guatemala Government in 1968, after years of

ng in El Salvador.
DEL NINO

ownership and operation by the United States-based United Fruit Company. The government renamed the former I. R. C. A. and the line is now known as the Ferrocarril de Guatemala (FEGUA), even though most of the equipment still lettered for the former owners.

Unlike most railroads, passenger service is the mainstay of the Ferrocarril de El Salvador, to the tune

Leading a train just in from Santa Ana, link and pin equipped narrow gauge 4-6-0 #12 sits at the Sitto del Nino station after a tropical rainstorm.



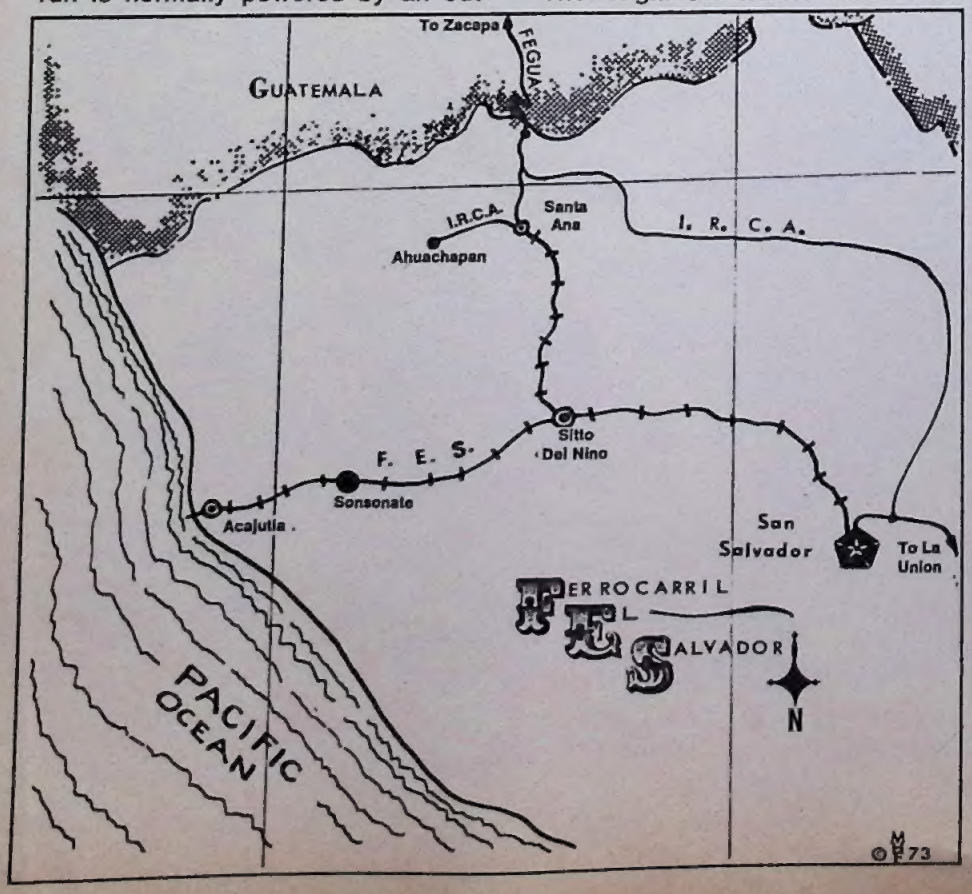
FES's caboose #45 was built at the turn of the century by Carter Brothers. The trucks make you wonder if they stole them from the Westside Lumber Company.

of twenty-four trains a day, most of them mixed and steam powered. Some trains are powered by home-made railcars, dubbed by visiting railfans as a "Galloping Banana." Many mainline passenger and freight trains are headed by trim narrow gauge 2-8-0s, some of which have seen service on Hawaii's Oahu Railway & Land Company's trackage and others which were formerly on the I. R. C. A., before that line was converted to diesel.

The Sitto del Nino to Santa Ana run is normally powered by an outside frame 4-6-0, part of a group of eight engines built by Baldwin between 1895 and 1910. Most of the trains are to be found on the run from San Salvador to the main shop town of Sonsonate. Local service, via "Galloping Banana," is provided to the port of Acajutla.

At 8:00 each morning and 4:00 each afternoon the westbound train from the capital city meets the east bound train from Sonsonate, while the mixed from Santa Ana is scheduled to arrive at the little Sitto del Nino depot at the same time. There is a great deal of activity in the village as three steam trains arrive from three different directions amid steam, smoke and Latin America whistle-talk.

The engines take-on water from the ancient double-spouted tank, passengers rush across the platform as venders offer their goods, while baggage is transferred from one train to another. The tiny Carter Brothers flat top coaches sway as small crowds move from their open end platforms. While the cars are equipped with three-quarter size Tower automatic couplers, they are often held together by link and pin couplers, as the F.E.S. mainline is not too level and cars often uncouple themselves enroute . . . the problem is eliminated with link and pin couplers.



El Salvador, smallest of the Central American republics, is also the friendliest of them all. The first railroad was built between the coast and Sonsonate as the Acajutla and Sonsonate in 1881-2. Another three foot gauge line was constructed from Santa Ana to San Salvador, and in 1895 an English firm combined the two lines under the present name. There are still a number of clerestory, open end passenger coaches with plates reading "Surry Works, Manchester, England."

Much of the equipment dates from the early days, few engines have been scrapped and most of the cars are 1880-90 vintage. When an engine wears-out, it is simply shoved onto a siding behind the Sonsonate Roundhouse and left there. The long line of rusting locomotives contains a consolidation built in 1889, a Cooke product of 1893 as well as several 4-6-0s from the 1890's. One former Oahu Railway 2-8-0, Number 36, is still on the active roster at this writing, while the other three Hawaiian engines rest behind the roundhouse.

Nothing rushes in El Salvador, except when it is time to buy "boletos" at the ticket booth in the station. Then, everyone crowds into line making the tropical 100° plus heat and humidity seem even worse. Tickets are certainly a bargain, however, and worth the rush at the depot. A ride on the Ferrocarril de El Salvador took two days and covered the entire mainline and the branch to Santa Ana in both directions for a little less than a dollar! That's two full days of 1890 open platform coaches, link and pin couplers, narrow gauge steam and windows that open for less than a buck.

A thirty minute delay is nothing in El Salvador; in fact, it does not really become a delay until the train does not arrive at all on the day that it departed. There are no scheduled night trains on the F. E. S.

The future of steam in Central America and especially on this last stronghold seems in doubt. A diesel was purchased several years ago

FERROCARRIL DE EL SALVADOR "GALLOPING BANANAS"

Railcars homemade in the Sonsonate Shop. Gasoline Powered-In service.

17 "Tacuscalo"
20 "Cuisnahuat"
21 "Tzaculpa"
22 "Zizimitepet"
24 open sided car
25 "Acaxual"

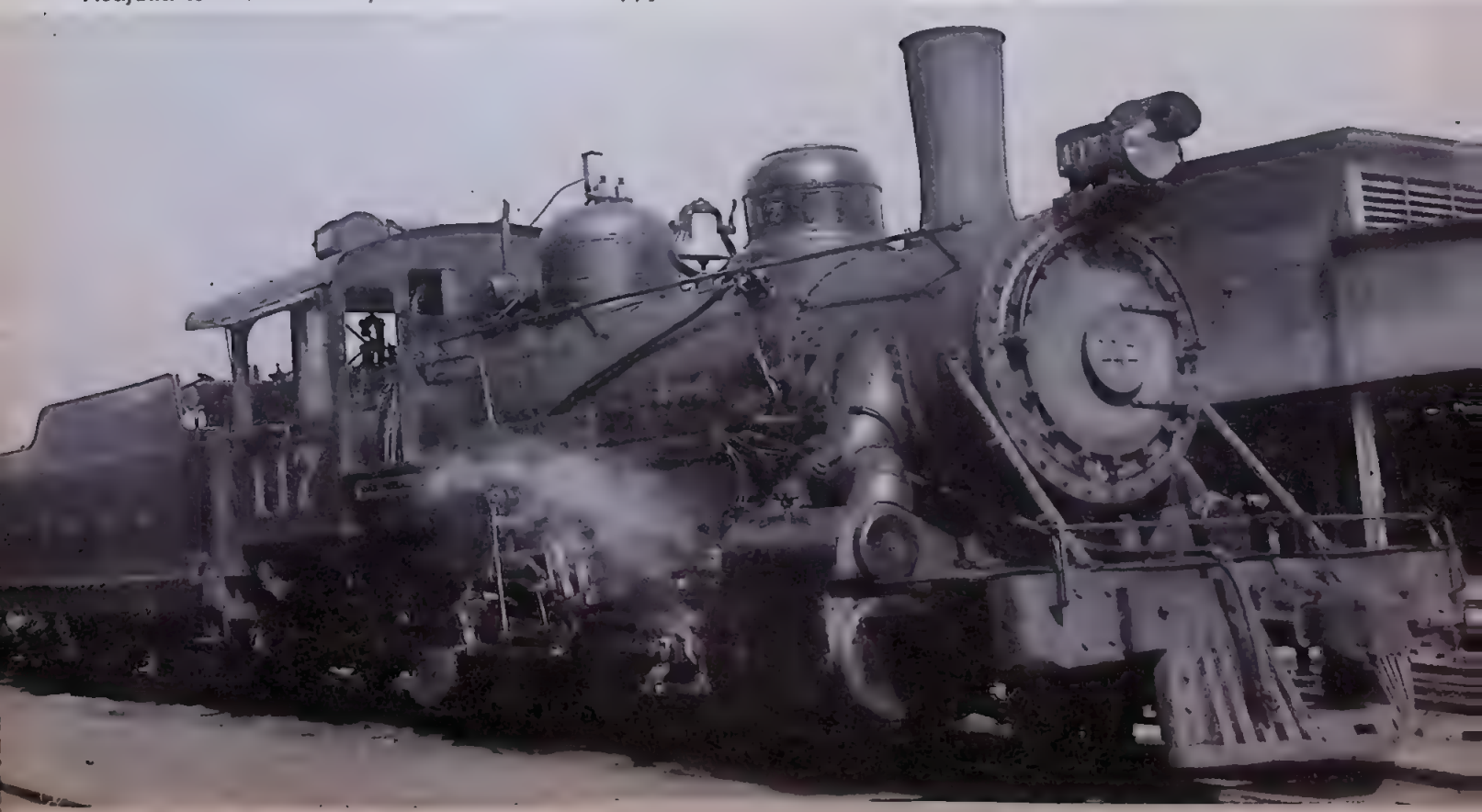
The steam passenger trains were helped out at times by the "Galloping Bananas," a group of homemade railcars.

from the Colombian railroads, but the German-built machine was not popular with the train crews and the Sonsonate shop men were not prepared to work on the engine, which kept breaking-down. "Mucho malo" is what engineer Mau Ros told the writer about the internal combustion engine. It sits in a shed at San Salvador, out of service.

Very much in service are a number of outside frame 2-8-0s and 4-6-0s. All locomotives on the F. E. S. are oilburners. The normal schedule calls for two steamers on the mainline and one on the branch line mixed train each day. Another engine is scheduled for yard work at Sonsonate, while two others take care of the regular freight traffic from Acajutla to San Salvador, where the F. E. S. makes connections with the International Railways of Central America. The I.R.C.A. is now fully dieselized and there is a great deal of talk that the larger road will soon take over the operations of the Ferrocarril de El Salvador. Should this happen, steam service would probably soon come to an end in El Salvador, the last stronghold in Central America. Recently the delivery of new Spanish built diesels in Guatemala has ended regular steam service on the FEGUA, leaving only some yard work and a few plantation lines to be powered with steam.

By taking a photograph of the trainmen, you'll assure yourself of their cooperation and help. The Sonsonate roundhouse men are more than happy to "show off" their engines and even built-up steam in a beautiful 1895 Baldwin 4-6-0 and moved her outside into the bright sunlight for photographs . . . a two hour job.

On Sundays, extra cars are added to the "Mixeto" trains to handle the added traffic. The homemade "Galloping Banana" railcars fill-in between the regular steam trains and all of them appear to be packed on weekends as the plantation workers



One of the Ferrocarril de El Salvador 2-8-0's as she appeared while still on the roster of the F.I.C.A. Gerald Best photo.

The term "big hook" seems hardly to apply when referring to the steam wrecker of the FES. The unit is seen stored at Sonsonate in June of 1970.

FES Baldwin 4-6-0, built by Baldwin, takes on water at the rustic two-way tank at Sitto del Nino. The 1910 Philadelphia product was assigned to the Santa Ana mixed train on the three-foot line.

travel to the larger towns.

A typical Sunday train from Sonsonate to the capital consisted of a flatcar of pipe, a carload of imported automobiles, a stock car, the "Correo" or mail car and five Carter Brothers coaches. Due to the large number of passengers returning to the coffee plantations, the train left town fifteen minutes late. After seven long, loud whistle blasts, the little oil burning 2-8-0 up front took up what felt like a half car length of slack and headed east.

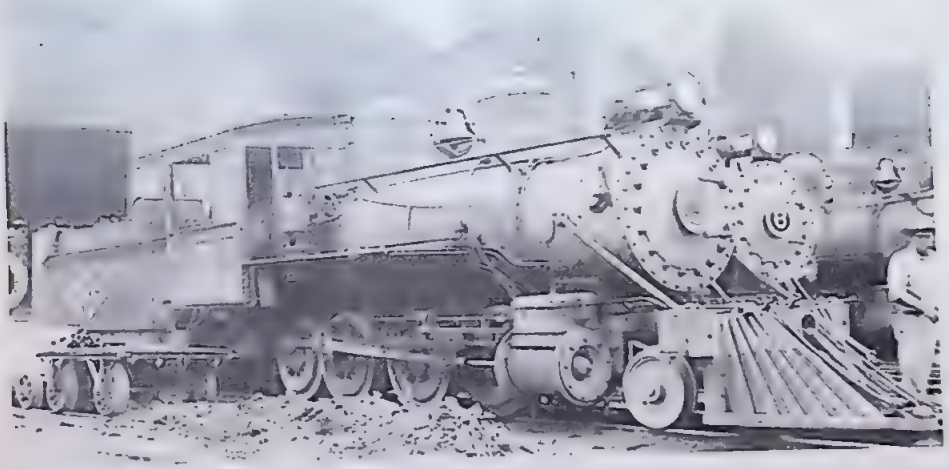
El Salvador is noted for its coffee and volcanos, and from the rocking narrow gauge coach windows you'll see many plantations and a few active volcanos. After a water stop, the train was off for a meet with the westbound train at Sitto del Nino. A sudden tropical storm brought down a flood of water, causing the former I. R. C. A. 2-8-0 to slip and come ot a halt on the wet rails, and the entire consist began to slide slowly backwards. The engineer put the little consolidation's Johnson bar all the way back and got up speed . . . backwards. After backing about half a mile, the train came to a stop and then, in a cloud of steam, smoke and sand, the little train made a run for the "hill," making it over the crest this time.

Westbound 2-8-0 #102 pauses at the little station of Sitto del Nino with a mixed train. The oil burning locomotive once saw service on United Fruit Company's Ferrocarril International de Central America line in El Salvador.

Regular narrow gauge power on the mainline of the FES is a fleet of former IRCA outside frame 2-8-0's. #102 is shown at San Salvador.

Track maintenance is not a number one priority in El Salvador. Here #101 waits for the passengers to board at the open shed type station at Sonsonate.

The Sonsonate roundhouse of the FES is the main shop of the three-foot line. Out back are lines of discarded engines, as few FES locomotives have been scrapped, there being no demand for scrap metal in El Salvador.



During the downpour, everyone shut their coach windows, except me. Mine was missing the glass! The friendly conductor located a spare louvered window, but by the time

A second class coach of the FES at San Salvador. The flat roof cars were built by Carter Brothers and are in remarkable condition considering their use and the climate.

BANANA REPUBLIC ROSTER

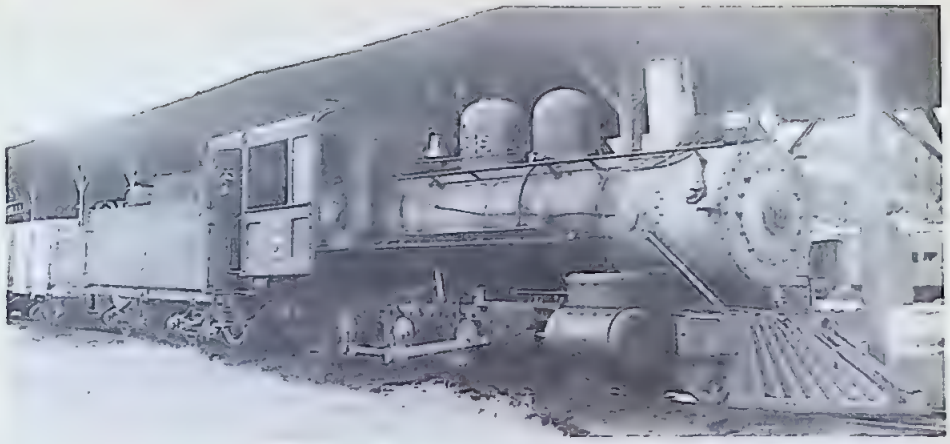
FERROCARRIL DE EL SALVADOR

Republic of El Salvador — Three Foot Gauge

Number	Type	Builder	Date	Remarks
1	4-4-0	Prescott, Scott & Co.	1881	Boiler powers Sonsonate Shop
2	2-8-0	Baldwin	1883	Scrap line, Sonsonate
3	2-8-0	Baldwin	1889	Partially scrapped, Sonsonate
4	2-8-0	Baldwin	1891	Scrapped
5	2-8-0	Cooke	1893	Scrap line, Sonsonate
6	4-6-0	Baldwin	1895	In service
7	4-6-0	Baldwin	1895	Scrap line, Sonsonate
8	4-6-0	Baldwin	1896	In service
9	4-6-0	Baldwin	1896	Scrap line, Sonsonate
10	4-6-0	Baldwin	1896	Scrap line, Sonsonate
11	4-6-0	Baldwin	1897	Scrap line, Sonsonate
12	4-6-0	Baldwin	1910	In service
13	4-6-0	Baldwin	1910	Serviceable
32	2-8-0	Rogers-Alco	1913	Ex-Oahu Railway & Land 32, Scrap line
34	2-8-0	Manchester-Alco	1912	Ex-Oahu Railway & Land 34, Scrap line
35	2-8-0	Rogers-Alco	1916	Ex-Oahu Railway & Land 35, Scrap line
36	2-8-0	Rogers-Alco	1913	Serviceable
101	2-8-0	Baldwin	1925	In service, Ex-I.R.C.A. 101, To F.E.S. 1966
102	2-8-0	Baldwin	1925	In service, Ex-I.R.C.A. 102, To F.E.S. 1966
109	2-8-0	Baldwin	1926	In service, Ex-I.R.C.A. 109, To F.E.S. 1966
112	2-8-0	Baldwin	1926	In service, Ex-I.R.C.A. 112, To F.E.S. 1968
117	2-8-0	Baldwin	1925	In service, Ex-I.R.C.A. 117, To F.E.S. 1968
201	Diesel	Ferrostaal FS7 Siemens, Germany	1962	Out of service. Ex-Columbian Ry. Model 1001 Diesel electric.

This little ten-wheeler was steamed up especially for the author and moved outside of the Sonsonate roundhouse for photos. It was a two-hour job, but was typical of the friendliness displayed by the narrow gauge line's employees.

Salvador Railway clerestory coach #518 was photographed by Gerald Best, who provided a change of pace for the passengers. The car was built at Surry Works, Manchester, England.



A good look at the FES's small workhorse, the 4-6-0 ten-wheeler. The locomotives have all been converted to oil but still retain their original wood pilots. Gerald Best photo.

he had placed it in the frame the rain had stopped. "It always stops, so why put in the glass?" the conductor said in typical Central American style.

At Sitto del Nino the westbound train was already waiting on a siding, while the little 4-6-0 from the branch line was taking water at the rustic tank. After all of the engines had taken on "agua," the air was again filled with smoke and whistling steam as three trains spun their small drivers and left town. For almos twenty minutes, Sitto del Nino was the most interesting place in Latin America, from the steam fan's point of view. Imagine the quiet of the little junction (with only two buildings other than the frame depot) being broken by the simultaneous arrival and departure of two narrow gauge 2-8-0s and an ancient 4-6-0.

An unusual operating procedure in El Salvador was the placing of loaded stock cars in front of the passenger cars, something I had not seen since the late 1940s on the Denver & Rio Grande Western narrow gauge in Colorado. The steam show was worth the smell any day!

San Salvador was reached just before sunset. The capital city is an interesting and friendly place, served from Mexico City by four airlines. If you have the time, you can still take a pullman from Mexico City on the National de Mexico (NdeM) to Tapachula on the Guatemalan border. Then take the narrow gauge Ferrocarril de Guatemala (FEGUA) to Guatemala and to Zacapa. The Hotel Ferrocarril in Zacapa is noted for its fine quail dinner and rustic, but fine old bar. The sounds of narrow gauge steam at the roundhouse across the tracks was once an added selling point for the ancient old hotel, but all those days are gone.

Next morning take the FEGUA to San Jeronimo and a connection with the International Railways of Central America (I. R. C. A.) at the border of El Salvador, for the run to San Salvador. By air, San Salvador is only a matter of several hours from Mexico City. Anyway you get there, the Ferrocarril de El Salvador is well worth the trip.

ABOUT THE AUTHOR—Mallory Hope Ferrell is as much at home in the cab of a narrow gauge locomotive as he is in the pilot's seat of a Boeing 707. In between flying for Western Airlines he has authored several railroad books including; "Rails, Sagebrush & Pine," "The Gilpin Gold Tram," and the soon to be released "Silver San Juan," the story of the Rio Grande Southern.

TRIUMPH AND TROUBLE

THINGS COULD BE BETTER ON THE BAY AREA RAPID TRANSIT BUT THEY ARE MAKING PROGRESS

A baby's pacifier was the very first item turned in to lost and found on opening day of the new San Francisco Bay Area Rapid Transit (BART) system. Perhaps it was an omen that the days ahead were going to be frustrating, sometimes disheartening and that nothing would pacify BART's band of loud critics.

Even though the ride is fast, smooth and much quieter than on other rail systems, critics still howl about the agency's management and charge that the trains and highly automated control system is unreliable and perhaps even unsafe.

BART opened its 28-mile Oakland-Fremont route on September 11, 1972. The day before, a Sunday, was warm and sunny. But at the sprawling Hayward Main Shop and Yard the weather was gloomy. At midafternoon, it seemed it would be impossible to have enough cars ready for the eight trains required the next morning. For at 10 a.m. the next day the public officials finally would dedicate the railroad. After waiting almost a decade the people who paid for it, the taxpayers, finally would be allowed to pay their fares and climb aboard at last.

BART not only was short of cars that day, most of the sleek aluminum-bodied speedsters designed to run on any satisfactory period of time at about 5 p.m. that Sunday. Suddenly a two-car train with Three Fingers at the helm was ordered ready. BART General Manager Bill Stokes and Don David G. Hale stated that the assistant general manager and chief engineer climbed aboard at Hayward Yard. The train ran properly and swiftly at speeds up to 80 miles an hour to Fremont. Ruffner removed the control key from the south car, walked through the two-car train to the cab on the north end, switched the controls on, and waited. Nothing happened. The train could not intercept an automatic command.

Shopmen earlier had found some printed circuits mounted on cards inserted in the automatic train control cabinet in the cars were defective. The cards, or "boards" as the technicians call them, were removed and taken to Emeryville. In the haste to get the railroad running, a mistake was made. Although Westinghouse Electric Corp. made new 'boards' for the cars, the defective ones were returned instead and put back in the cabinets. The error was discovered at about 1 a.m. on Monday the 11th, only nine hours before the ceremonies were to begin.

Lee Washburn, a supervisor who came to BART from the Western Pacific Railroad, called Stokes on the telephone at about 3 a.m. It is unlikely Stokes was sleeping soundly, even at that hour. "Mr. Stokes, I'm sorry to bother you," Washburn said. "But I thought you'd like to know we have eight trains for you."

Opening day was almost flawless. Most waited hours in line at the 12 stations along the line from Macarthur to Fremont to say they were "there on Day One," the moment the Bay Area Rapid Transit system stopped being a dream and became a fact as well as a hope for rebirth. Amusement parks and new inner suburbs

Then things went wrong.

On October 2, only a few days after President and Mrs. Richard M. Nixon rode a special train (and even discussed the Moscow *Metro* subway with Stokes), a two-car southbound train approaching the Fremont terminal station misinterpreted an automatic command. A tiny crystal in the cab cabinet that was supposed to receive a 27 mph "speed code" was improperly mounted. It did receive the 27 mile an hour signal, but because of the defective mounting, it "read" the message at approximately 70 mph.

Instead of slowing to 27 mph to negotiate a crossover the train abruptly sped up. It later was calculated the cars lurched through the two crossover switches at 66 mph. Only a miracle kept the cars on the rails. Trainman Eli Palmer pressed the emergency "STOP" button. But there was not enough room in which to stop. The train struck a sandpile at the end of the track. The couplers between the cars were broken, and the second car halted, still on the track and undamaged. But the lead, or south car, plowed through the sandpile, then careened downward, stopping with its badly cracked fiberglass cab "nose" resting in the station parking lot, a few feet from the words "Stop" painted on the pavement. Five persons were injured slightly.

A Wall Street investment analyst reporting to the Assembly and Senate [illegible]

BY HARRE W. DEMORO
PHOTOS BY THE AUTHOR

A train that was towed by a hi-rail vehicle under San Francisco Bay through the 3.6-mile-long tube, awaits the public at the Powell and Market streets station in June 1972, when the subway was on display.

oriented states, had already been investigating BART. He issued a highly critical report of the automatic controls. Post contended a complete manual backup system might be needed and that it appeared the San Francisco line, which involves complex junctions and a highly reliable control system, would be indefinitely delayed.

Even James R. Mills, the respected and scholarly historian who is a Democratic senator from San Diego and president pro tem of the state senate, was upset at BART. Mills, who without question is one of rail transit's strongest friends in any of the 50 state capitols, called BART, "a *Titanic* without lifeboats."

When BART representatives and officials of the manufacturers and engineering consultants appeared in Sacramento, the capital, to answer the Post Report charges, the session quickly degenerated into a BART blood bath, with Post and his advisors at stage center.

Post labeled replies by Stokes, Hammond and others as "gobbledegook."

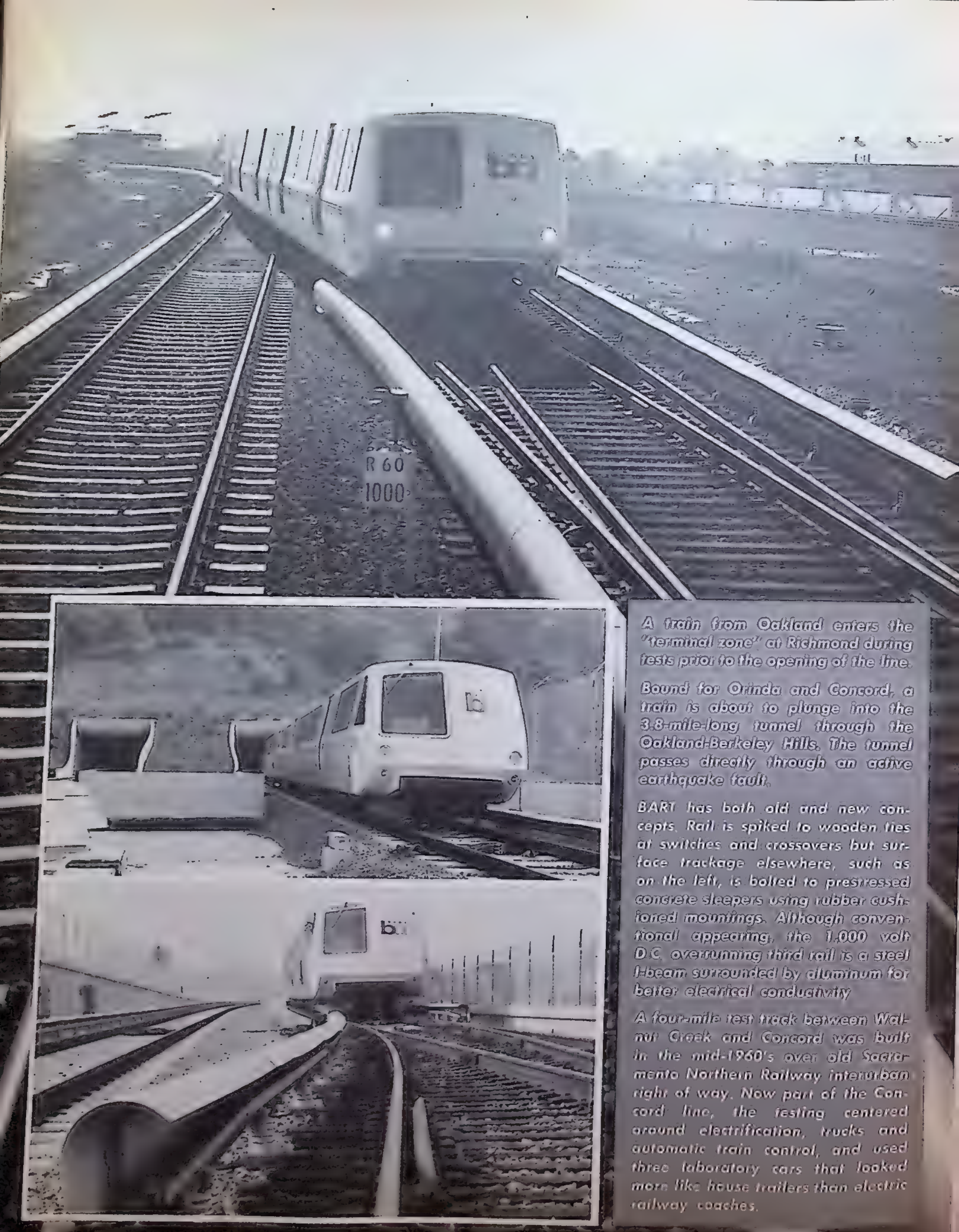
Robert Johnston, general manager of the Port Authority Transit Corp. (PATCO) rapid transit line was quoted in the *San Francisco Chronicle* as being critical of BART. The story said Johnston and his associates, who operated the automated line between the suburb of Lindenwold, N. J., and Philadelphia, had warned BART a manual backup was needed.

Post and others hailed the Lindenwold line as a model for all to behold. What they didn't say was that the Lindenwold line was equipped by General Electric Co. and Westinghouse Air Brake Co. (WABCO) and that Johnston had formerly worked for General Electric. Post also did not point out, if he or his aides knew it, that the General Electric motors under the Lindenwold cars were being returned to the factory for an expensive rebuilding, only three years after the line had been put in service! That fact later was reported by the *San Francisco Examiner* and the *Oakland Tribune*. Few persons bothered to point out that Westinghouse Electric Corp., builder of the BART propulsion system and automatic controls, was involved in a bitter dispute over technology in Pittsburgh, Pa. Also not mentioned was that General Electric had declined to bid on the solid state propulsion system demanded in the BART specification but Westinghouse did not protest and, indeed, perfected the highly sophisticated "chopper" components.

Stokes praised the Lindenwold operation. But he said that even with its many technical problems BART was running automatically 95 to 99 per cent, a far higher percentage than the Lindenwold line. This was why Johnston's railroad needed a complete manual backup control, Stokes said. BART had complex junctions and far greater distances than the PATCO operation. It would run more trains at closer intervals and at higher speeds than the Lindenwold system. Thus, Stokes reasoned, BART had to be fully automatic and that manual operation could not be tolerated. Only a system capable of such speeds and complex junctions could provide a ride fast enough to compete with the San Francisco Bay Area's appetite for freeways and automobiles. Stokes testified at the state hearing, presided over by Sen. Alfred Alquist, a former railroad switchman.

After the Sacramento sessions, the State Senate appointed a three-member panel of experts to look into the Post Report and to investigate the automatic train control design and actual installation. It was truly a "blue ribbon committee," headed by Dr. Bernard Oliver, respected electronics expert and vice president of Hewlett-Packard Co. of Palo Alto, just south of San Francisco. Hammond, Stokes, engineers and manufacturers welcomed the panel, which generally stated that improvements would have to be made before the line with all of its complex junctions could open to San Francisco. But the panel certified the present operation as safe, mainly because it did not have junctions. In most respects Dr. Oliver and his associates endorsed improvements and changes BART engineers already were planning. Much of that work already was being done when the Post probers were investigating the system. Stokes had contended Post ignored the fact that he got most of his information and ideas from the transit agency's own staff of experts!

Shortly after Stokes and Hammond praised the Oliver report, Dr. Oliver wrote a personal letter to a Westinghouse executive, criticizing some of the automatic control concepts. A state legislator, reportedly, leaked the letter to newsmen. Once again, the critics had additional fuel.



A train from Oakland enters the "terminal zone" at Richmond during tests prior to the opening of the line.

Bound for Orinda and Concord, a train is about to plunge into the 3.8-mile-long tunnel through the Oakland-Berkeley Hills. The tunnel passes directly through an active earthquake fault.

BART has both old and new concepts. Rail is spiked to wooden ties at switches and crossovers but surface trackage elsewhere, such as on the left, is bolted to prestressed concrete sleepers using rubber cushioned mountings. Although conventional appearing, the 1,000 volt D.C. overrunning third rail is a steel I-beam surrounded by aluminum for better electrical conductivity

A four-mile test track between Walnut Creek and Concord was built in the mid-1960's over old Sacramento Northern Railway interurban right of way. Now part of the Concord line, the testing centered around electrification, trucks and automatic train control, and used three laboratory cars that looked more like house trailers than electric railway coaches.

quit in disgust in January 1975 and now heads a consulting firm team that will build a BART-type system in Baltimore.

Hammond said he is "tied a hell full." He was critical of the critics, including Post and some newspapers. The former Army Corps of Engineers officer (who once headed all Army construction in the continental United States) suggests problems and especially the BART Board, should "become part of the solution rather than part of the problem." One of Hammond's supporters on the BART Board, James P. Doherty, of El Cerrito, told the disgusted engineer, "If you ever consider coming back here, you're a damn fool, um serious." Doherty who has supported Stokes and his staff said he does not expect to be reappointed to the BART Board this fall, when his first term expires.

Replacing Hammond was Charles O. Kramer, formerly of Southern Pacific, who came to BART early in

A conventional-appearing board is used to control movements within the Hayward Yard. Built by Philco-Ford, it uses a computer rather than traditional relays and interlocking components to assure safety.

Urban traffic at Fruitvale Avenue and East 12th Street in Oakland does not hinder this three-car BART train heading north from the Fruitvale el station. All at-surface and elevated portions of BART are landscaped.

the design effort and was familiar with the automatic equipment as well as the cars. Like Hammond, Kramer was a fighter. To those who complained about the trains and equipment, he simply would say: "The trains are running, aren't they?"

Usually those trains were running, but there were times when they were erratic. Sometimes they wouldn't stop at stations. Other times they would, but then wouldn't start. The cars were plagued by a long list of problems Stokes called, simply, "The Litany." The automatic controls still needed "tuning" and modification. Some delays lasted as long as one hour in the rush periods.

But there were no more injury accidents. Stokes noted that the escalators in the stations had hurt more patrons than the trains.

And on January 29, 1973, the Oakland-Fremont line was extended by 10 miles and six stations to Richmond. Another 20 miles and six stations were added on May 21, 1973, with the opening of the section between MacArthur station in Oakland and suburban Concord.

Each weekday some 25,000 to 30,000 persons passed through the "fare gates" at the 24 stations. The automatic fare collection system, produced by International Business Machines, sells magnetically coded tickets in any amount from 30 cents to $20. Vending machines do all the work and although "bugs" appear occasionally, BART officials say the equipment functions remarkably well.

The major problem areas are the cars and automatic controls.

The cars were built by Rohr Industries, Inc. The firm, at Chula Vista, south of San Diego, is an aerospace company that never built a rail car until it obtained the BART order in 1969. It now also is building the new Washington, D.C., *Metro* subway cars and is involved with Amtrak. BART ordered 250 cars in 1969 and later another 100 for a total price of approximately $114 million.

The automatic equipment was designed and built by Westinghouse Electric Corp. The firm, under subcontract to Rohr, also is supplying the car motors and the propulsion control. Although well known in the transit industry as builder of electrical equipment for subways, streetcars, interurbans, heavy railway and trackless trolley buses, the BART order was the firm's first major work in railway signaling. Since winning the BART contract in 1967, Westinghouse has been hired to install a

Miles of Route*	75
Stations**	38
Track gauge	5'6"
Cab car length	75'
Non cab car length	70'
Top speed	80 mph
Average speed	45 mph
Voltage	1,000 D.C.
Rail	119 lb./yd.
Car width and height	10'6"
Seats (both types of car)	72

Minimum train, two cars: maximum train, 10 cars.

*Includes four miles exclusively for San Francisco streetcars.

**Includes four exclusively for San Francisco streetcars and four joint streetcar-BART in San Francisco.

All cars have four 150 hp Westinghouse 500 volt D.C. motors.

similar automatic system in São Paulo. Brazil. Westinghouse has at least 500 million in prime and subcontracts involving BART.

Equipment along the tracks divides the railroad into "blocks" similar to those used on conventional railroads for cab signals or wayside light signals and semaphores. The train wheels and axles "shunt" a circuit in the block and this triggers a "zero" command in the block behind the train. This is similar to standard railway signals and cab signals. But Westinghouse used an electrical current lower than usual.

A central computer "knows" the optimum schedule of every train on the railroad. If a train is late the computer attempts to speed it up. But the computer cannot tell the train to disobey the speed commands in the "block" that the wayside equipment puts into the running rails and is picked up by induction coils mounted just ahead of the car wheels. The computer can be shut off and the trains still will run automatically, but in many cases they will begin arriving earlier than scheduled!

Early in the testing, it was realized that BART's light cars with disc axle brakes were not polishing the rails to create a good wheel-to-track contract to "shunt" the detection equipment. On a few occasions, one car that was unpowered failed to trigger a "zero" speed code in the block behind. Although the system cannot dispatch a one-car train, the state Public Utilities Commission directed BART to prove an unpowered single car can be detected at all times. Revenue trains with passengers always have been detected.

It was at first thought that once the trains ran for a while they would polish the wheels and rails sufficiently. But it did not happen. In the interim, BART supervisors have been stationed at various station stops. They verify by telephone that there is two-station separation between the trains and hold a train at a station to restore the spacing. This results in eight to 10 minute intervals between trains rather than 90 seconds, which the system is supposed to achieve and has in testing.

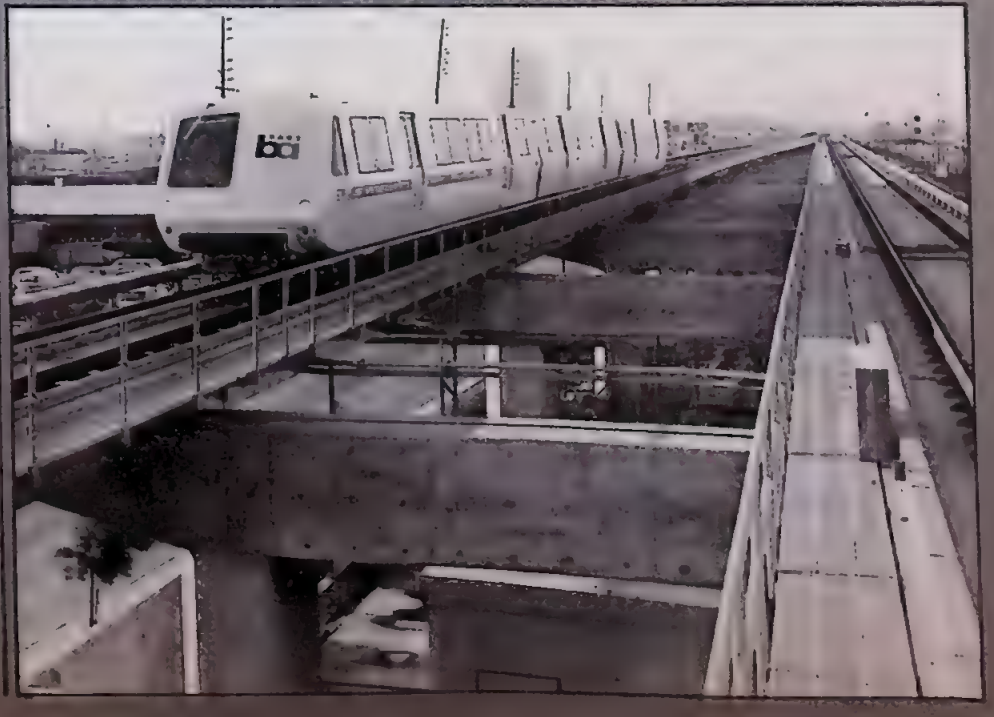
In May 1973, the BART Board approved putting "scrubbers" on the 350 cars on order. These metal devices rub against the train wheels and polish them. The wheels then "condition" the rail and assure absolute contact with the rail. Stokes says with "not exception," all trains are now being detected. It is expected at least 250 cars will have

(Text continued on page 77)

A two-car test train snakes through a crossover on rail laid in median of the Grove Shafter Freeway in Oakland between Rockridge and the Oakland-Berkeley Hills Tunnel portal. Note the wide track gauge, 5 feet, 6 inches.

Car interiors are bright and spacious. Floors are carpeted, seats cantilevered out from sidewalls and liberal use is made of deep upholstery for seating. Cars are air conditioned and have air springs. All cars seat 72 and are 10'-6" wide.

A third three-car train was added to the service on October 18, 1972, just in time to handle World Series crowds. Car 501, one of the original 10 prototypes and now rebuilt to revenue configuration, is the middle car as a loaded southbound three-car train passes over the Coliseum



NIGHT PHOTOGRAPHY-ANOTHER VIEWPOINT

I found Mr. Clark's article on night photography in the May issue of **Rail Classics** to be most interesting and informative, but he also raised a number of points with which I don't agree, which has compelled me to present my views for consideration by those who are serious about experimenting with night photography. The viewpoint I am going to present is from the standpoint of a photographer working in 35mm with Kodachrome II.

I believe that 35mm is the most common format in use today, and thus deserving of the most discussion, and I also believe that Kodachrome II is the color film that obtains the highest quality results in that format. To the best of my knowledge, when working in color, you would have to increase your format size to at least 3¼ x 4¼ to exceed the resolution capability of 35mm Kodachrome II. It is THE color film to use if you want professional quality results from a 35mm camera.

The top camera for railroad photography, be it night or day, is the rangefinder M-series Leica. Unfortunately, the high price of this camera will preclude its use by many, and admittedly most single lens reflexes offer better value for the money if you are budget conscious, but for the photographer who wants the most professional 35mm tool available on the market today, Leica is the choice.

On the subject of color correction, I would approach the use of filters over the lens at night with extreme caution for a number of reasons. My primary concern is that filters can cause unwanted secondary images which can ruin an otherwise good shot. But aside from that, recognize what a color correction filter is really supposed to do—make the light illuminating the scene bluer or redder than it really was.

Color balance was designed as a system to produce true color rendition under critical conditions, for example when recording human subjects in well lighted interiors. But, outdoors at night, "true" color balance doesnt really exist, and becomes very much a matter of personal preference. For example, the "noon daylight" approach normally advocated for tungsten light sources results in pictures that look unnaturally blue to me. The natural bluish shift of Kodachrome II caused by reciprocity failure in time exposures produces tungsten color balance that looks just about right to my eye when the film is unfiltered. Tungsten light is definitely amber in color! Look at a row of houses at night, and you will note that the lighted windows are almost invariably amber in color, not white.

Flash bulbs carry some big surprises too, for even though blue bulbs are supposed to be used with daylight color film, the clear ones produce results so good when used outdoors at night, that I doubt even an expert would be able to tell for sure that the "rule" had been violated. Bear in mind also that when you take up with filters, you are complicating the decision making process, since in many cases it may be difficult to guess which filter to use.

Even a color temperature meter is normally accurate only for tungsten light, not for fluorescent or mixtures of tungsten and fluorescent.

Finally, recognize also that when slides are projected in a darkened room, as they normally would be, the eye is free to make considerable col-

These two photographs show a scene as taken with time exposure and existing light, and as taken with a clear No. 22 flash bulb fired in from the left to highlight detail. You be the judge as to which has more snap. D&RGW narrow gauge, Durango, Colorado, October 8, 1962.

BY T. H. GILDERSLEEVE PHOTOS BY THE AUTHOR

This is straight flash using multiple flash synchronized at 1/125th second using five No. 22 clear flashbulbs to provide nearly all the illumination in the picture. Bulb placement pattern was virtually identical to the one outlined in the diagram, except that a fifth bulb was used to illuminate the overpass in the background. AT&SF, San Diegan, Miramar, Calif., Aug. 1964.

or accommodation, just as it would in the original scene. The point of all these facts is to argue against the use of filters, with the possible exception of greenish fluorescent illumination where the blue shift of Kodachrome II works against rather than for you. In addition to introducing the possibility of unwanted secondary refractions showing up on the film, filters cut into effective film speed, and materially increase the time, effort, and decision making to which the photographer must subject himself, and this all adds up to more lost shots and fewer taken.

In the area of flash photography, the only alternate I would consider to straight flash photography would be synchronized multiple flash with the camera shutter set at 1/125 or 1/250 second, thus eliminating almost all natural light except for light sources, such as headlights or lights. This technique is extremely difficult to bring off successfully, as virtually everything not illuminated by flash is totally BLACK, which means lots of bulbs to inject any kind of life into a scene. Since few readers will be tempted to try it, I will not dwell on it.

My favorite technique is the open flash time exposure, similar to what Mr. Clark refers to as straight flash, where the locomotive is illuminated primarily by flash, with natural lighting picked up during the time exposure being used to build depth and naturalness into the scene. However, my technique is quite different than that proposed by Mr. Clark.

First of all, as I previously indicated, I use clear bulbs with daylight color film, rather than the blue ones. This fact alone doubles the available power output of any bulb. In addition, I favor the use of really big bulbs. A clear No. 3, for example, packs 14 times the light output of a No. 6B. No. 50's and 22's pack 12½ and 9 times the power of a 6B, respectively. With this kind of power available, I can illuminate the entire side of two diesel units with one bulb by standing off 100 feet with my flash unit from the surface to be illuminated, rather than the 35 feet suggested for No. 6B's. This absolutely guarantees my removal from the scene when firing the flash unit, thus eliminating the need for some of the sophisticated apparatus suggested by Mr. Clark.

I normally use f:2.8 for open flash works, and a clear, shiny reflector to get every ounce of power out of the bulb. In addition to color balance and intensity, light also has directional qualities. An overcast day produces a quite different effect from a sunny day, for example, and glare produces quite a different effect from sunlight which comes from the direction of the camera. The effect of numerous flashes fired on a locomotive at short range is to tend to erase shadows, and thus reduce visible detail.

On the other hand, if a single flash is allowed to throw glare off the side of a locomotive back toward the camera, two advantages will be realized: First, more light will be reflected to the camera, and second, every nut, every bolt, every raised detail on the side of the locomotive will cast a shadow toward the camera, giving the picture an appearance of incredible sharpness.

This ability, the ability to put the light where I want it from where I want it to be coming from, is the prime reason for my preference of open flash night shots. One additional benefit can be gained, however; if any steam or exhaust is eminating from the locomotive, the speed of the flash will tend to freeze it, making it look real. Time exposure would tend to record steam or exhaust as a smudge, very unnatural looking.

Admittedly, Mr. Clark is far from alone in his preference for straight time exposure, but I question the claim that this is photographing the subject "as is." Maybe in a few cases this might be true, but long time exposures are usually going to change the subject appearance from the way the eye saw it. Of course I consider this desirable, for in most cases the scene is so dark that what the eye saw was very little. On the other hand, what I attempt to do with flash is not to record the scene, but rather to create it, as I think it ought to be. There are few areas of rail photography where the photographer has as much opportunity to be creative.

How much flash I apply to a scene is directly related to the natural light available; its directional qualities and quantity. For example, a brilliantly illuminated depot scene may not lend itself to flash at all, as the subject is well illuminated on all sides so brilliantly as to make flash impractical and undesirable. A short time exposure, perhaps 5 or 10 seconds at f:2.8, is all that can be tolerated without over-exposing to the point of losing the nighttime effect.

Other scenes, however, might offer a different mixture of lighting. Perhaps the side of the train is defined, but there is little light on the front or side of the locomotive. Or, perhaps the front has some illumination, but there is no light on the side of the locomotive. The photographer must decide what is available as natural illumination, and then decide what should be added in the way of flash to build the scene for the desired effect.

I rarely attempt to mix natural light with flash to illuminate the same surface. The mixing occurs by using natural light for some surfaces and flash for others, for example using existing tungsten light for the frontal illumination while using flash to bring out the side of a locomotive. I do not visualize night photography as simply a means to get around the problem of bad weather, or to get a ¾ shot of a unit that might not be available for photography the following morning after the sun is up.

To me, night photography, done well, conveys a feeling, a stirring of the soul. With this in mind, exposure may have to be considered in a different manner than would apply in daylight. The "right" exposure may be all wrong from the standpoint of conveying this feeling. For example, maybe the right effect for a particular scene is to have ample illumination on the side of the locomotive, but very little on the front, just enough to make it visible. Perhaps no illumination whatsoever on the unit is the right approach, allowing it instead to be silhouetted against a bright background. (Mr. Clark exhibits a fine example of this technique on page 40 of the February '73 issue of **Rail Classics.**)

Silhouette is probably a technique that gets little attention from night photographers, but it can have a dramatic impact in balancing the mass of the locomotive against its background. This can be achieved with the sky if it is well illuminated and laden with mist as it appears to be in Mr. Clark's example. If the subject is standing in front of a building, the silhouette can be achieved by standing behind the locomotive and throwing a flash on the side of the building. This latter technique would probably require some frontal and side illumination on the locomotive to carry the picture. If the background is particularly dark, it may be desirable to create a "reverse silhouette" by brilliantly illuminating the subject against the darkness.

Glare is a phenomenon which deserves critical attention from the night photographer. With shallow angles of incidence and reflection, surfaces reflect most of the light which strikes them. This effect enables the eye to see many objects at night which would otherwise be too dark to be a tool of considerable value to the distinguished; and therefore becomes night photographer. It creates lighting effects that look extremely natural in night scenes, such as the reflection of rails leading to the camera.

It also enables one light to make an entire train visible, by glaring off the side of the train. This is important, for an approach ¾ shot of a train will require more than the locomotive to be visible to give the proper balance to the picture. One flash fired from perhaps 500 to 1,000 feet away toward the camera, can make the train visible, or perhaps a signal or other existing light source can substitute to achieve the same result. In either case, the train need not be well exposed, just visible, and the flash, if used, is so far away as to appear to be part of the natural scene even though it is directly visible in the picture.

Of course, a reverse ¾ shot of the locomotive eliminates the need to show the train, and can usually be handled with one flash bulb. Glare can also be useful in defining weather conditions. Dampness on tracks is really emphasized with glare, and glare off the side of a wet locomotive can really serve to emphasize the fact that it was raining when the photograph was taken.

The brief foregoing discussion on the application of light is not intended to over complicate the art of night photography, but rather to give you a picture of some of the ingredients that make some pictures come alive while others fall flat. Much of what I suggest will become automatic reflex to you if you pursue the subject seriously.

For the photographer just "getting his feet wet," the basic lighting plan illustrated in the figure will suffice to handle 90% of the night scenes likely to be encountered. Many of the effects I have discussed will automatically be in the picture if this technique is followed. Although the figure is set up for use with flash bulbs, it is not essential to apply flash at each of these points. Existing light could be substituted for flash at any or all of these points if it is available.

Using this basic lighting plan, with few flashes and no filters results in quick decision making and rapid procedures. Night photography can thus be relatively easy, which will encourage more people to try it, and the rapid procedures will enable pictures to be taken at locations where a train may be standing only moments. Longer, tedious procedures, involving potentially tricky decisions on filters, will tend to limit your attempts at night photography to engine terminals, ready tracks, etc., where the equipment can be expected to remain standing for extended periods.

The brief discussion I have pre-

A

Heavy mist in the air combined with a well lighted yard in the background presented an opportunity to create a "mood" by silhouetting the cars against the bright background with a straight time exposure, no flash needed. Note how glare illuminates the string of cars to the right, and how it makes the overhead catenary zing. Note also how the brilliant reflections on the rails in the foreground emphasize the cold, damp weather. Pennsylvania RR electrics, Paoli, Pa., March, 1963.

B

All the light for this shot was existing except for one clear No. 22 flashbulb used to illuminate the entire side of the engine and tender from the far right. Note how light from one of the windows in the engine house illuminates the front of the snow covered locomotive, and even projects an image of itself in the snow in the foreground. Note also how a light on the exterior of the engine house luminesces the steam emanating from the locomo-

C

This scene approximates the "reverse silhouette" approach. Three No. 22 flash bulbs were used in a pattern similar to the one outlined in the diagram; one to illuminate the front of the locomotive, and two to illuminate the sides of the four units. Glare from the red signal served to make the trailing train visible, and therefore, no flash was needed for that purpose. Milwaukee Road electrics, Othello, Washington, November, 1964.

tive to provide a firm silhouette outline of the engine. The green reflection on the cab and the green cast on the snow piled on the pilot of the locomotive were not evident to the eye when the picture was taken, and probably originated from neon lights in the nearby town. It provides an example of a quirk which can make filter selection very tricky, since the natural choice here would have been a blue filter if one had been used at all. D&RGW narrow gauge, Chama, New Mexico, March, 1963.

A

sented here is intended to provide only a nutshell capsulization of how to put a picture together. There are myriads of possibilities; every scene offers many recipes that could be tried if time permits. There is no textbook that can crystalize technique, either. In fact, many times the best effects can be created by violating textbook rules. Since there are no textbook rules to follow, you will have to develop your own.

Observe the published night photographs that you like, and study them to analyze how the photographers put them together to create pleasing effects. Observe also your own success and failures, and study them to understand what made them what they are. When time permits, shoot a scene several different ways, and then select the result that produces the most pleasing effect, and study why.

Study and experience will be your prime guides. Nobody, not Mr. Clark, not I, can tell you which technique is right for you. In the final analysis, there are as many techniques as there are photographers practicing the art. Hopefully, my discussion, in concert with Mr. Clark's, will give you enough information to recognize many of the choices you will have to make, and will help you to make meaningful decisions regarding the direction your own style will take.

B

C

Chicago, "Railroad City, U. S. A.," has long been heralded as the east-west terminus of national passenger service. A point to which the New York Central and the giant Pennsy systems once held daily races for the transcontinental trade. A place where east met west in the bustle of transfer between the likes of the *Super Chief* and its eastern cousins. Even today, those of us who still think passenger trains are nice things to have around can find solace in Chicago. Indeed, it's today's passenger train paradise!

Until the advent of Amtrak, Chicago boasted of no fewer than seven major railroad stations. Although several attempts to establish a true Union Station were made, they never materialized. Today, six of these stations survive. All Amtrak intercity trains and Burlington Northern, Milwaukee Road and Illinois Central Gulf (former B.M.&O. Chicago-Joliet service) commuter services use the larger Union Station. Although the fabled "400's" have met their fate, Chicago and North Western commuter services will arrive and depart from Madison Street Station (C.&N.W. Terminal).

Non-Amtrak, Rock Island, utilizes

CHICAGO

Former Gulf Mobile & Ohio passenger cab pauses on the Illinois Central Gulf mainline with the northbound Amtrak ABRAHAM LINCOLN at Joliet, Ill. Mary L. Langley photo.

GO

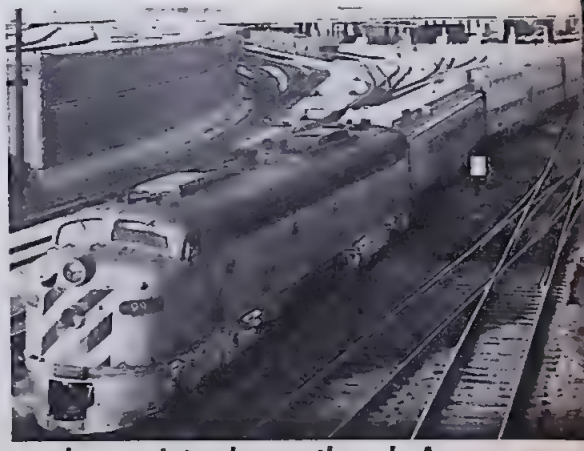
La Salle Street Station for it's *Quad City* and *Peoria Rockets.* Rock Island commuter trains also arrive and depart from the stub end platforms of La Salle. Dearborn Station, once the eastern terminus for the Santa Fe "war bonnet" fleet, now hosts a single, lonely Norfolk and Western (former Wabash), commuter train while Illinois Central Gulf's Central Station now serves as an on-line electric commuter station. Randolph Street Station, located beneath the Prudential Building, is the major terminal for I. C. Gulf and South Shore Line Electric suburban trains.

Today, Chicago train watching provides an unparalleled cross section of national intercity and commuter passenger service. No doubt Roosevelt Road viaduct, spanning the southern throat to Union Station, La Salle Street Station and the remnants of Dearborn, is the city's most active passenger gateway. Seldom will a railfan find himself alone here at this, the "Cajon Pass-Horseshoe Curve-Saluda Hill" of the windy city. A steady stream of bi-level Burlington Northern commuter runs shuttle between Union Station and Aurora during rush hours with hourly service during the midday lull. In addition, more than twenty intercity Amtrak trains arrive and depart through the Union Station throat between 7 a.m. and 10:00 p.m. Included in the parade are the *Super Chief-El Capitan, Texas Chief, George Washington, Broadway Limited, Floridian, Panama Limited, Illinois Zephyr,* and the *Abraham Lincoln,* to name only a few. It is also significant to note

One of the few full observation cars in the country today operates on Amtrak's ABRAHAM LINCOLN between Milwaukee and St. Louis. Here observation PORT OF VANCOUVER clicks through the crossovers leading to Union Station.

Amtrak's TEXAS CHIEF departs Union Station still attired in the Santa Fe's red and silver war bonnet loco paint scheme, though Amtrak painted cars make up the revenue consist.

A Burlington Northern commuter train passes through the Union Station's yard throat at Roosevelt Road. Note the special heater car directly behind the locomotive, in BN silver.



TRAIN WATCHER'S PARADISE

PASSENGER TRAINS, BOTH AMTRAK AND NON, ARE IN ABUNDANCE IN THE WINDY CITY, ALONG WITH A VARIETY OF DOWNTOWN STATIONS.

BY A. M. LANGLEY, JR.
PHOTOS BY THE AUTHOR EXCEPT AS NOTED.

A single Norfolk & Western (formerly Wabash) commuter train uses the once bustling Dearborn station, once the eastern terminus of the Santa Fe's glamorous SUPER CHIEF. Mary L. Langley photo.

MAJOR CHICAGO RAILROAD STATIONS

Name & Type	Railroads Formerly Using Its Facilities	Current Occupants and Usage
MADISON STREET STATION (Also known as Chicago and North Western Terminal or North Western Station) STUB PLATFORMS	Chicago & North Western (commuter and mainline trains)	Chicago & North Western (commuter service only)
UNION STATION STUB PLATFORM WITH ONE THROUGH PLATFORM FOR SOME MILWAUKEE SERVICE	Pennsylvania R.R. Burlington Route Gulf, Mobile & Ohio Milwaukee Road	Amtrak intercity trains operating over the following railroads: Burlington Northern Milwaukee Road C&O-B&O Penn Central Illinois Central Gulf Santa Fe Commuter service via: Burlington Northern, Milwaukee Road, I.C.-Gulf
LaSALLE STREET STATION STUB PLATFORMS	New York Central Michigan Central Nickel Plate Road Rock Island Lines	Rock Island—non-Amtrak intercity trains Rock Island—commuter trains
DEARBORN STATION STUB PLATFORMS	Chicago & Eastern Illinois Erie-Lackawanna Grand Trunk Monon Santa Fe Wabash	Norfolk & Western—commuter service
CENTRAL STATION THROUGH PLATFORMS	Illinois Central Big Four Route Soo Line	Illinois Central Gulf—commuter service Chicago, South Shore & South Bend—commuter service
GRAND CENTRAL STATION STUB PLATFORMS	Baltimore & Ohio Chesapeake & Ohio	Building Razed—former B&O-C&O services now handled by Amtrak at Union Station
RANDOLPH STREET STATION STUB PLATFORMS	Illinois Central Chicago, Southern Shore & South Bend	Illinois Central Gulf—electric commuter service, Chicago, South Shore & South Bend—electric commuter service

that both Burlington Northern and Penn Central maintain coach yards astride the Union Station throat, affording the railfan a constantly changing view of passenger equipment in these road color schemes as well as relettered Amtrak equipment.

A short walk down Roosevelt Road brings Rock Island's piggyback facilities and the throat of La Salle Street Station into view. Commuter service to Joliet is frequent with a hodgepodge of rare General Motors "E" units in push-pull service. As with the case of all commuter operations, early morning and late afternoon rushes bring the heaviest traffic. Rock Island's non-Amtrak *Peoria Rocket* and *Quad City Rocket* both arrive in mid morning and depart in late afternoon. In addition to the Rock Island traffic, the single Norfolk and Western commuter train may be seen arriving and departing from Dearborn at this point.

Indeed, Roosevelt Road is a very busy place and one would do well to take twice as much film as he believes necessary.

Push-pull trains of the Chicago and North Western are funneled into Madison Street Station from three different routes: the North Line from Kenosha, Wisconsin; the Northwest Line from Harvard, Illinois, and the West Line from Geneva, Illinois. Service is frequent, especially in rush hours, and the bright green and yellow bi-level equipment is perhaps the nation's finest. Although on-line locations afford the train watcher a

At rest in Joliet, Illinois after a forty-hour cross country is the Amtrak (ex-Santa Fe) SUPER CHIEF/ EL CAPITAN with the old and fairly tired, though still attractive F-7's, soon to be retired.

Once alive with active stations Chicago now sees all Amtrak trains using Union Station. Non Amtrak runs such as Rock Island and ICG commuter service use La Salle Street and one lone N&W commuter uses Dearborn Station.

more scenic atmosphere, an excellent view point for traffic from all three of the North Western's lines is afforded by a single platform that extends from North Western Station.

Here, also, the Milwaukee Road's suburban (North Line to Walworth, Wisconsin, and West Line to Elgin, Illinois), and mainline routes pass under the C&NW Terminal platform. Such revered name trains as the *Empire Builder, Prairie State, Abraham Lincoln,* and the *Hiawathas,*

CHICAGO-AMTRAK PASSENGER SERVICES

Train Name & No.	Participating Railroad In Chicago Area
Prairie State 320/301, 304/329	Illinois Central Gulf, Milwaukee Road
Abraham Lincoln 326/303, 302/323	Illinois Central Gulf, Milwaukee Road
Empire Builder 7, 8	Milwaukee Road
North Coast Hiawatha 9, 10	Milwaukee Road
Hiawatha Service 321, 322	Milwaukee Road
Hiawatha Service 324, 325	Milwaukee Road
Hiawatha Service 327, 328	Milwaukee Road
Broadway Limited 40, 41	Penn Central
Wolverine 360, 361	Penn Central
St. Clair 362, 363	Penn Central
Floridian 52, 53	Penn Central
James Whitcomb Riley 51	Chesapeake & Ohio-Baltimore & Ohio
George Washington 50	Chesapeake & Ohio-Baltimore & Ohio
Panama Limited 58, 59	Illinois Central Gulf
Shawnee 391, 392	Illinois Central Gulf
Denver Zephyr-San Francisco Zephyr 55/5, 56/6	Burlington Northern
Illinois Zephyr 347, 348	Burlington Northern
Super Chief-El Capitan 3, 4	Santa Fe
Texas Chief 15, 16	Santa Fe

CHICAGO NON-AMTRAK INTERCITY SERVICES

Train Name & No.	Participating Railroad
Peoria Rocket 11, 12	Rock Island Lines
Quad City Rocket 6/8, 5/9	Rock Island Lines

CHICAGO AREA COMMUTER OPERATIONS

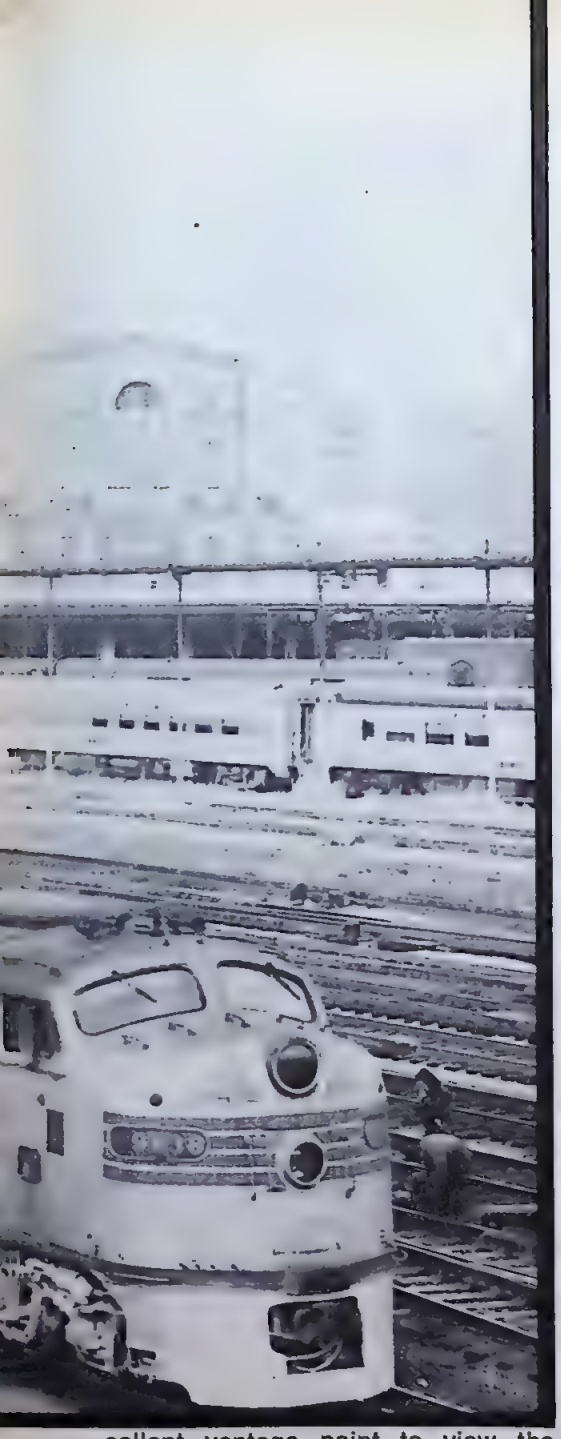
Chicago Transit Authority	subway, elevated and private right-of-way high speed commuter trains
Illinois Central Gulf	highspeed electric commuter services also former GM&O diesel powered commuter service between Chicago & Joliet (1 train)
Chicago South Shore & South Bend	high speed electric interurban service
Norfolk & Western	Chicago-Orland Park commuter service (1 train)
Chicago & North Western	Push-Pull commuter service on 3 routes
Chicago, Rock Island & Pacific	Push-Pull commuter service to Blue Island and Joliet
Milwaukee Road	Push-Pull commuter service on 2 routes

Rush hour in Chicago sees Burlington Northern commuter trains in an almost constant stream rolling in and out of Union Station.

add color to the commuter scene.

Further Chicago commuter service is provided by the Illinois Central Gulf's extensive electric operations as well as the Chicago South Shore and South Bend and the Chicago Transit Authority. Central Station, near Grant Park, provides an ex-

The last of the true Chicago interurbans, Chicago South Shore & South Bend #100 pauses near Central Station (ICG) in downtown Chicago. These cars are gradually being replaced with the orange and silver Hi-Liners.



cellent vantage point to view the newer I.C.G. orange, black and silver double deck electrics as well as their vistage heavyweight predecessors. South Shore trains, the last of the Chicago interurbans, also trundle through the crossovers here on their way to Gary and South Bend, Indiana. The Illinois Central Gulf service is quite frequent throughout the day with hourly South Shore service, excepting rush hours.

The Chicago Transit Authority operates a basically urban service reaching out from the downtown loop

A BN push-pull control cab rolls toward Chicago after leaving La Grange, Illinois on a cold December morning. The windshield wipers are for the engineer's windows.

A Rock Island push-pull double decker commuter train awaits departure time at Joliet, Illinois. Note the pilot, headlights and horn on the rear/front of the last coach necessary for backward running.

area on elevated trackage into near suburbia. Some eight major lines exist, being connected via subway and operating on existing railroad and private right-of-ways. In all, a very interesting system, viewed best from outlying points.

Indeed, much of the Chicago area passenger scene is best viewed from the suburbs. The Burlington Northern, for example, is highlighted by its commuter stations of classic charm at Brookfield and La Grange (home of EMD's locomotives). Vintage Burlington passenger units, running in what appears to be the 8th notch, slam through gate protected right-of-ways with both suburban and mainline trains in true Hollywood fashion.

Suburban Englewood Station (junction of former N. Y. C., P. R. R. & C. R. I. & P.), still stirs memories of the *Broadway* and *Century* neck and neck on their respective eastbound mains. Joliet Union Station, some thirty miles southwest of the Loop, still mixes railroading of yesterday with that of tomorrow. Imagine Santa Fe's *Super-C* freight roaring across the Rock Island diamond just vacated by a *"Rocket."* Visualize the *Super Chief-El Capitan* pausing at its final stop before Chicago after a long, long journey, and the *Abraham Lincoln* calling for the board in its heels.

No indeed, the passenger train is not dead. It's alive and well. Neither does it appear near extinction. At least not in Chicago—A Train Watcher's Paradise. (Please turn page)

With a single EMD F leading the way a commuter train of the Rock Island slowly pulls away from La Salle Street Station. These commuter runs are push-pull affairs for ease of operation.

A Burlington (now BN) E-8 A with its shiny silver nose is seen pulling a bi-level commuter train at La Grange, Illinois, home of EMD, while facing the early morning sun.

Chicago & Northwestern suburban bi-level service is some of the finest in the nation. C&NW #4088 is seen as it roars through Oak Park, Illinois with a push-pull commuter.

A vintage Fairbanks-Morse switcher nudges Amtrak's TEXAS CHIEF into the south throat of Union Station. The ancient Santa Fe F units will soon be replaced by Amtrak's own SDP40Fs.

Not all commuter trains are long busy affairs as can be attested by this lone Milwaukee Road E unit with its single coach at Elmwood Park, Illinois. A far cry from THE FLORIDIAN.

ROCK ISLAND
676

36

LAST TANGO IN

CALIFORNIA'S DESERT POTASH HAULER SAYS BYE-BYE TO

"We're going to be running behind schedule today, gentlemen," was the matter of fact greeting coming from the assistant general manager, significantly followed by, "there's a road foreman of engines in from the Southern Pacific and he's going over their diesel operating rules."

It was true then, an oft repeated rumor about the demise of two Baldwin center-cabs from Trona Ry.'s all Eddystone built roster was imminent. But just when was the wake scheduled?

"Today" was March 23, 1973, and one week plus two days was all the main line future left to these unique examples of the early diesel builders art. With an occasional use status left to the only other example of a live center cab on the Minneapolis, Northfield and Southern, *Rail Classics* had fortunately arrived in time to preside at a requiem for two examples of an almost extinct breed of locomotive.

Standing in the assistant G. M.'s office we could look through to an adjacent room where the Espee official was busily describing how SD-39's, 40's, U-boats and other assorted second generation types differed in control functions from the venerable Baldwin center-cabs and AS-616's, two of which complete this short line's power book. Two dozen years old, almost to the month and reaching the age where a figurative "hardening of the arteries" was well advanced, the two square profiled DT-6-6-2000's had been a bargain but now their economy was suspect.

TRONA

BY DON SIMS AND DAVID LUSTIG
PHOTOS BY THE AUTHORS

THEIR UNIQUE PAIR OF BALDWIN CENTER-CABS.

Uniqueness may impress the rail enthusiast but not the master mechanic and parts had become a problem accompanied by the malaise of age.

But enough of waxing nostalgic, let's see how the Trona worked these center cabs during their final days, days just like innumerable ones that added to the years of a routine that seldom varied from one decade to the next.

Outside Trona Ry.'s headquarters —not so curiously in the small desert community named Trona—the idling chorus barely audible over the hum of air conditioning sits a trio of black units, their functional dress frilled with traces of red and silver striping. Just below each cab window is a huge white circle, serving as a backdrop for the drawing of a Joshua tree dominating a far-off horizon, the symbolism of a desert which happens to be Trona's arena.

The conservatively tiny unit numbers, etched in red on a silver end begin with No. 52 leading, followed by No. 50, then No. 51, the troika comprising 75% of the current roster. An adjacent shop holds No. 53, whose innards are exposed in the course of an engine rebuild.

Rationally, Trona Ry. is first and foremost an industrial hauler, a 30 mile extension of a mineral deposit and technology's applications for the products it holds. Two large chemical plants process minerals and provide Trona Ry. with its tonnage and reason for being, a commercial route built upon a legend of borax, mule trains and at one time, primi-

Rounding the last curve on the last mile into Searles, the Baldwins slow down for the Southern Pacific interchange. The Espee tracks, foreground, continue north to Lone Pine and at one time was the connection for the narrow gauge at Owenyo.

A week after our initial March 23rd visit, and only two days before retirement of the center-cabs, 50 and 52 head back to Trona after making the connection at Searles. Despite its modern lineage, caboose 101 was set aside when the new SP arrangement was made.

tive Renault tractors.

Twenty-four years of railroad servitude in the wind-swept, blistering California desert have taken a toll that isn't apparent on the surface—indeed the black bellied units sound well—but on closer inspection the microscopic details of maturity are evident. It's like some elderly dowager with a dozen face lifts which are betrayed by scars beneath a ruffled collar. Here and there the cowling was thin or holed by a molecule of rust which paint couldn't totally protect. Still, shop forces kept the center-cab's diesel heart pulsing year after year when many another road would have gone off prowling for an update.

Written off, though they may soon be, Trona Ry.'s returned their investment in spades on this duo of Baldwin behemoths.

Switching inside the gates of Kerr-McGee, principle industry and owner of the Trona, the trio begins the arduous job of making up a train. The four Baldwins are unique in another way too . . . they still have their builder's plates intact.

The March 23rd train was mostly potash laden hoppers with a sprinkling of box cars here and there. Trona is far behind us now, an oasis in the middle of an unforgiving, barren desert, capable of supporting only cactus and scrub brush.

The final day of center-cab hauling was April 1. Next day the sun rose on a new timetable. Southern Pacific's daily connection from Los Angeles, marked up in chalk as WMJ wouldn't cut its red and grey units at Searles but would head straight through to Trona. A short line crew would be drawing down the mileage rate but for connoisseurs of the diesel locomotive another era had played out its final curtain call.

Time, technology, plus exhausted machinery are no recipe for a preservative and now the dwindling ranks of Baldwins were to be thinned still further.

Rightly, Trona Railway isn't just an extension of Baldwin mythology and soon enough we'll come to that, but for the moment, desert railroading's 1973 headline is an epitaph to be carved about two bulky, ungainly looking diesels that finally wore out and are to be stricken from the active list. No funeral cortege will be held, the units will routinely make a final trip sans any fanfare, then wind down, their crankshafts turning slower and slower while still warm oil oozes into a crankcase and congeals.

Having outlasted all their erecting shop brethern except one, the aforementioned M. N. & S. cousin, Trona's center-cabs will retire with a large statistic in ton-miles. Shuttling to and fro between the S. P. interchange and Trona town, the years of revenue service made up in steadiness what they lacked in length. The routine rarely varied, two trips out, two back. Sum total of a day's achievement. 120 road miles, a limited amount of switching chores and 24 years in the books. Weekends called for a single round trip ticket as the call boys telephone never went dead.

It might seem predictable to state the units wheezed and sputtered through their final week of main line calls but is wasn't totally true. They weren't young and healthy and they sounded—in their Baldwin mannerisms—just like any other diesel. Yet on closer inspection No. 51 was

Cooling her heels between runs, center-cab 51 relaxes patiently just outside the enginehouse at Trona. The facilities are compact but very complete and the railroad is capable of all but the heaviest repairs.

Engineer A. L. Anders performs switching chores with the three Eddystone graduates at Kerr-McGee before heading out on the main. With 39 years of railroading behind him, 16 of those on the Trona, this was just another day. Tomorrow would be the same thing all over again.

breathing on a single lung, the other having been shut down because one traction motor had burned out. So

The fourth member of the Baldwin roster is 53, seen behind the Trona enginehouse on November 27, '71. The unit is ex-Southern Pacific 5249 and the only one purchased second-hand. 53 was in the middle of an engine overhaul on March 23rd in preparation for her new role as yard switcher.

This is what a typical Trona consist looked like in 1954 with a predominance of box cars instead of covered hoppers. Except for the replacement of the road name by the herald on the side of the cab, these photos could be dated almost anytime.

Slipping past one of the two GE plant switchers, the train starts to take shape as the crew clears Kerr-McGee's yard of loads. That's not snow on the ground but layers of potash.

for all their bulk, their impression of dynamic force, the totality of 1½ center-cabs could conjur up but 3,000 hp, the muscle of a single SD-40.

Normally—and this is what a railroad like Trona thrives on, normalcy—the day's first crew is called between noon and 1 o'clock, but today it's 3:30 p.m. before the men have been briefed on S.P.'s diesel power and they call the conference finished. A short walk brings the

Keeping a diesel in shape includes checking her belly too, as one of Trona's shop force shows us how it's done. Notice the date on the rail below his arm, the same year the road was built.

(following page)

With less than 48 hours left in road service for 52, and the longest night of all for center-cab 50, the pair indulge in a brief breather within sight of Trona's principle shipper and owner, Kerr-McGee. In a few minutes the night crew will arrive, train #3 will be on the timecard.

Grinding uphill on one of the many grades, train speed slips to about 15 mph as engineer Anders lets it out another notch while blasting the air horns for the desolate crossing. Both center-cabs are million milers.

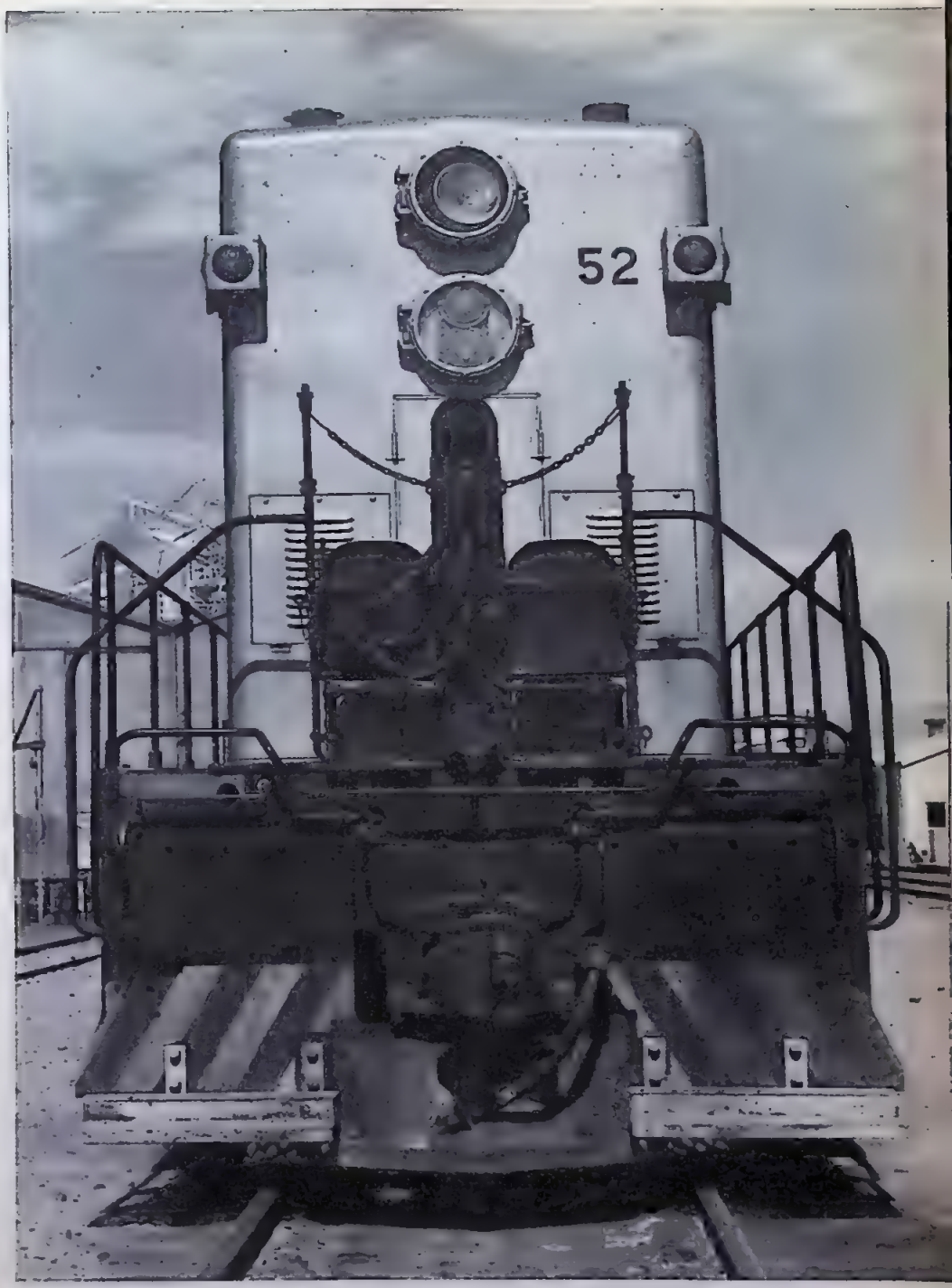
engineer to the site of his ritual; check running gear, engine oil, fuel, brakes . . . Two quick triggered horn blasts say everything's O.K. and a trio of straight lined forms move away from the corrugated metal building that is the road's shop.

Over on the next track sits a silver, cupolaed caboose, soon to be obsoleted too, since S.P.'s image into Trona will be complemented by its own side saddle version of a crummy.

Hitching onto the tail-ender with a clatter, the black dressed trio pull it forward a half-mile, cut loose and entered the wide gates of a chemical plant where Kerr-McGee's corporate logo denotes ownership rights. The railways headquarters rests in the plants shadow but access to its rail yard is some distance away.

A half-hour is consumed while

Too long to both fit in the engine-house at the same time, the two center-cabs take turns being inspected before the afternoon train. Despite the constantly falling particles of potash and black color scheme, the units maintain a fairly clean appearance.



Front end of a Baldwin road-switcher, Trona style, with the oscillating Mars light above and the twin-sealed beam headlights below. The mu equipment is located between the double gang-ways. 52, like sister 53 now stay close to Trona and West End as yard goats.

the Baldwins put together their train, working several short cuts off loading docks and into worthwhile size in a small, dust sprayed yard. Moving a few hundred yards farther down the line a set of storage tracks yields more cars, mostly covered hoppers, enough to complete the consist. Missouri Pacific frequently publicizes its daily chemical train north from the Texas gulf area but not many are aware of Trona's unadvertised relation.

Westbound—that's rail lingo since the physical pattern is more north-south—a train with its predominance of fat, covered hoppers haul potash, soda ash, lithium, salt cake and other formulated assortments, while inbound come empties for loading and the materials that chemical plants need for fodder. Since the road's a common carrier a variety of miscellanea pays part of the operating expense.

Not all local products move in hoppers or box cars, since overseas destinations account for a smattering of brightly colored container on trailer train cars drawn up by the loading doors. Marked in bright, predominantly Oriental brand names, they speak of shipboard voyages to far Pacific ports.

Apprehensively — we wanted as many photos as possible of the soon-to-be-axed center-cabs—we kept one eye cocked on a shifting light pattern, the other on the black units still switching. Now it was after 4 p.m., the sun moving down the horizon as a light meters needle flickered lower. Just before 4:30 p.m. the air brake pressure climbed high enough and away went Trona Ry'.s train No. 1, at 2480 tons almost dead even with the average 2500 ton per run standard.

A question comes to mind as the train overcomes inertia and air horn's its way through a highway crossing west of town. Desert country is flat, isn't it? So why the need for three heavyweights, circa first generation, on the point?

Collectively, it's all wrong for Trona, but business is where you find it and you can't quibble. Major tonnage is wrestled uphill, practically all the way, while inbound tonnage to town, predominantly light, is coasting downgrade. Twenty-five hundred tons doesn't sound like three Baldwins will be overburdened and marching off at the head of a short troop the appearance is deceptively one of overpowering.

Answers are explained on a topographic sheet, printed in numbers that measure Searles Lake, a dry desert phenomenon which supplies the chemical plants with raw materials. Perched mid-way along a slope that's descending towards Death Valley, the lake bed comes in at 1,655 feet above sea level from which base the line climbs to the Espee junction where the altitude is just about doubled at 3,248 feet. Maximum grade over the course is a healthy 1.85%, enough to wind any kind of unit.

West End, whose self explanatory geography places it 4.2 miles beyond Trona's yard office, houses the roads other major source of revenue. Stauffer Chemical Co. is here, providing about a third of the steady pipeline of chemicals, while Kerr-McGee contributes the balance. Throw in a digital allowance for "other" and you have the waybill origins pegged.

In the Baldwin saga of habit—as of this writing, past tense—Trona Railway called out two crews a day. The routine called for carded schedule No. 1 to be made up at Trona then run to Searles bypassing West End. After dropping cargo for S. P. consumption the power became a

A sight not oft to be repeated; the operation of two mu'd center-cabs, plays out one more hand before retirement. They'll be on hand at Trona for a little longer but their ultimate fate will be a blast furnace at a scrap yard. Hey MN&S, need any spare parts?

caboose hop under the guise of train No. 2 and slipped back to the Stauffer plant at West End. Half an hour was then consumed in switching whereupon the units moved over to Trona and worked about a bit to make up train No. 3 before calling it quits.

A few minutes intervened after No. 1 officially died then along came the second train crew to start with No. 3, a straight through shot to Searles. By now night had fallen and a couple of hours were spent under starlight, working a desolate, wind swept yard. The next set of markers, red glimmers faintly trolling across the desert decking came as No. 4, stopping at West End to spot empties for tomorrow's loading. Quiet generally descended upon the railroad sometime between 11 p.m. and midnight. Weekends contributed a single daily round trip to the trainsheet.

Circa 1973 began on April 2nd as the center cabs went into limbo. Originating in Los Angeles and taking off on the Lone Pine Branch at Mojave, S. P.'s connection highballs 48 miles along the branch to Searles. While the Espee men dismount, Trona's trainmen take over, having been deadheaded over from town. This transfiguration takes place about mid-afternoon while the return journey is scheduled out of Trona sometime between 8 and 9 p.m. Ultimately, the Trona Ry. crew will have to deadhead back via highway before signing off.

The shortline's second crew will work a switching trick, making up trains and keeping the chemical plants stocked with empties.

Notwithstanding what is to be, let's return to the center-cab's countdown, following them out to Searles on timecard No. 1.

Burbling easily past West End with its jumbled piping and assorted mounds of vari-colored chemicals, the diesels with more conventional AS-6-16 No. 52 controlling are not exactly breaking records as they fol-

An engineer's view from #52 as the train knocks off mile after mile of desert scenery. Since there are no turning facilities at Searles, all units are dual control equipped. 52, the newest of the four units, is the crew's favorite.

Carrying a two-way radio, #1's conductor has just finished checking car numbers prior to leaving Trona. All crew members wear safety-striped radio equipment as half of the switching chores are done at night.

low long, gentle curvature into desert solitude. Steadiness, not speed is Trona Ry.'s forte and the limit is a very moderate 25 mph.

Beyond West End the operating timetable lists two sidings, Spangler and Garden City, the latter possibly tagged by some with a wry sense of humor or under the influence of a mirage. There's no way this bone dry desert will support greenery, rather the scene is one of sparse, burnt brown scrub brush. The sidings themselves are superfluous, what with only one train aboard at a time and it frequently used all four units. Conceivably with the new scheme two trains could operate simultaneously, but it's doubtful.

Wishful thinking would have put the center-cabs up front, the honored finale to a long and fruitful career, but it wasn't to be. Laconically, the hogger tells you he prefers the cab of an AS6-16 over that of a DT 6-6-2000, so this day his viewpoint prevails. On the way back in he'll control from the same engine, now rearwards, so unpalatable is his opinion of the well seasoned diesels. To him, to the railroad, 50 and 51 are capital goods, merely utilized to perform transportation, and when they wear out, their usefulness is calculated in profit, not sentimentality. Convenience is the work ethic of note.

Three-quarters of the roster burble quietly after being inspected, mu'd and readied for the 30 mile uphill run. After running light back, they'll switch West End before returning to Trona and a new crew to start the operation all over again.

Working uphill, now slightly faster, now lugging slightly, train No. 1 skirts the shoulders of low lying mountains that flank a slender valley. Keeping to the northern slopes, tracks have pretty much of a clear line of thought to Searles. There's no cuteness to this layout, no compound curves, just the straightforward thinking of the 1913 surveyor

(Text continued on page 80)

There are times when everything seems to go just right for the photographer: the train; the lighting; the overall mood; everything clicks right into place. A beautiful example is Preston Cook's captivating early morning shot of an Erie-Lackawanna freight accelerating uphill out of a fog bank last June near Canisteo, New York. A few minutes later and the scene would have disappeared, changing the mood entirely.

Two Jersey Central SD40's and an EL SDP45 roll through Clinton, N.J. with ES-99 on its way to Scranton, Pennsylvania and the EL. Lead by an example of CNJ's new "Red Baron" paint scheme, the daily train pools power, cabooses and crews of both roads. Ray Threlfall photo.

Sometimes stand-by service keeps older first-generation power from the scrapper just a little while longer, as in the case of Monongahela's last two Baldwin sharks, 1205 and 1216, waiting quietly at the road's Brownsville, Pa. yard. Both units are ex-New York Central. Peter Brill photo.

In 1970, though still on the property, Rio Grande's F units had generally been relegated to secondary service or on the lighter trafficked lines. This scene is at Walsenberg, Colorado where after taking time out for a meal, the crew of this train bound for narrow gauge country is resuming its journey. Hardy Garringer photo.

Still sporting a shine on her nose, Rock Island FT 93 lends a helping hand to 2-10-2 3023 as they battle upgrade at Davenport, Iowa to get their freight out of the Mississippi River Valley and into Chicago in this 1950 scene. Charles H. Ost photo.

Pounding through Colton, California in March, 1951, SP Mountain-type 4351 heads up the front of #39, the Imperial, maid-of-all-work local passenger run across Espee's southwest route. Scheduled for the Colton stop: a helper for Beaumont Pass. Donald Sims photo.

PHOTO GALLERY

Both esthetically and performance wise, Philadelphia & Western's "Bullets" of 1931 were a radical departure from conventional electric railway cars. 42 years later, speeding between Upper Darby and Norristown, the "Bullets" are still classics. Harre W. Demoro photo.

Struggling to start 86 cars of coal in North Yard at Paducah, Kentucky, IC 2-10-2 2807 leading the "Chiles Turn" is destined for a large power plant on the Ohio River just north of town. A temporary power shortage on the IC resulted in this March 6th, 1960 scene. H. S. Patrick photo.

Two locals and one crew, that's the essence of this 1952 scene in Alameda, California. The Alameda Belt Line crew has temporarily dismounted S1 #D3 for a stint in leased Sacramento Northern steeple cab 442 to switch a few industries under the wire and with curves too sharp for the Alco switcher. Homer Mossfligh photo.

Meter gauge Beyer-Garret #398 "Tres Cruces" gets under way at Oruro, Bolivia with the morning passenger train for Cochabama in this April, 1966 photo. A few months later the line was nationalized and in 1970, Mitsubishi diesels were fast taking over. H. S. Patrick photo.

Have a favorite railroad photo you would like to share with others? Send it to the Gallery *with a short paragraph describing the train and the location. If your photo is selected for use, you will receive a free one years subscription to* Rail Classics. *Send photos (at least 5"x7") to:* Rail Classics *Gallery, 7950 Deering Ave., Canoga Park, California 91304.*

"We have demonstrated that the concept is sound."

"The yearly decline in train ridership that continued for decades has been reversed and started on the upgrade . . ."

"We have increased our total revenues and reduced our deficits . . ."

"During our first two years we have taken over the responsibility for rail travel operations, assembled a staff that continues to acquire increasing competence, and we have made improvements in trains, stations and service."

These extracts from a report by Amtrak President Roger Lewis reporting to Congress open a recent release from the National Railroad Passenger Corporation called "Amtrak at Two—A Progress Report."

To keep you informed as to what is going on within Amtrak we present here a capsule report, in Amtrak's words, of just what has been accomplished in the first two years and a glimpse of things to come.

A remarkable story. The beginning steps in the creation of a new national transportation system—an achievable, acceptable "third choice" for Americans justifiably concerned that their existing modes of transportation are being strained beyond capacity and becoming too costly in dollars and in irreplaceable public resources.

This Second Anniversary summary of progress, prepared by Amtrak, describes both the accomplishments and the disappointments of the past two years with the emphasis on the past 12 months. Here are the highlights:

- *RIDERSHIP system-wide is up 11 per cent over corresponding May-November period of 1971.*
- *NET CASH LOSS from operations in fiscal year 1973 is estimated to be $124.0 million, down 18.6 per cent from FY 1972's $152.3 million. (This loss is projected to drop another 18.6 percent to $95.6 million in fiscal 1974.)*
- *REVENUE INCREASED from $152.7 million in fiscal 1972 to an estimated $179.4 million in fiscal 1973.*
- *EQUIPMENT—Major equipment overhaul and refurbishment programs accelerated with substantial refurbishment now completed on 650 cars of the 1,600 car fleet.*
- *NEW TRAINS—Turbine-powered trains for use on non-electrified track have been leased or ordered with service expected to begin this summer and fall in the Midwest.*
- *NEW LOCOMOTIVES — Orders were placed for 40 new diesel locomotives and 15 new electric locomotives with the diesels to be available this summer and the electrics next year.*
- *RESERVATIONS AND TICKETING—A $7 million computerized reservations and ticketing system is being installed allowing Amtrak customers anywhere in the United States to phone for instant reservations or to inquire about schedules, fares or services. Segments of the new system are to be available this summer in the East and will be in full service by 1974. In 1972 Amtrak began accepting six major credit cards.*
- *BAGGAGE—Standard baggage policy instituted nation-wide does away with all checking service charges and sets uniform allowances for free checked luggage.*
- *FARES AND SCHEDULES—Na-*

tional timetables were issued and fares adjusted across the Amtrak system to make charges more uniform and more equitable.

• MAIL AND EXPRESS—Mail carried on Amtrak trains earned the corporation $2.2 million in 1972 and was expected to earn $4 million in 1973. A small package service was begun on Eastern Corridor trains with the potential for expansion nation-wide.

• INTERNATIONAL SERVICE — Amtrak added two new routes to Canada, one from Washington to Montreal and the other on the West Coast, between Seattle and Vancouver, British Columbia. Service to Mexico started with a route between Fort Worth and Nuevo Laredo with connections to Mexico City.

• FOOD SERVICES—Food quality went up and prices went down—in some cases by 20 percent. Dining car patronage and revenues began to go up.

• FUN SERVICES—Cabaret cars, movies and color television were added to some trains. Other lighthearted responses to the new life styles of Amtrak's customers included special baggage car accommodations for skis and bicycles.

• PACKAGE TOURS — Rail vacation package tours became available in over 70 variations in 1972 as travel agents stepped up commission sales of Amtrak services.

• MORE TRAINS — Additional trains, most with refurbished equipment, were added in the Boston-Washington Corridor and on routes along the Eastern Seaboard, in the Midwest and on the West Coast.

• PERSONNEL—In July Amtrak signed its first labor contract. Amtrak staff expanded from just one employee, its President, two years ago, to more than 2600 today. Many employees have completed extensive training courses.

• TERMINALS AND STATIONS—Modernization, refurbishment and outright replacement began on over 100 Amtrak terminals and stations across the land. At Cincinnati the first completely new station went into service in October. A second new station, in Jacksonville, Fla., is expected to serve passengers this year. Efficient new facilities, including consolidation of stations at Chicago, are expected to save Amtrak $2,500,000 annually.

• PUBLIC ACCEPTANCE—A poll by the Louis Harris organization showed Americans in favor of a rail passenger service by a margin of 64 to 22 percent . . . "even if it means federal subsidies."

• ADMINISTRATION SUPPORT — The President's budget, noting that "the Administration recognizes the importance of rail passenger travel," recommended that Amtrak be continued beyond its initial two-year trial period and that the Corporation's borrowing authority for capital improvements be increased from $200 million to $500 million.

• NET YEAR—Roger Lewis, Amtrak's President, told Congress that the Corporation plans to spend $150 million on capital improvements in fiscal 1974 including $35 million to buy new self-propelled and conventional passenger cars, $27 million to buy new locomotives, $50 million to begin the massive job of improving rights-of-way. An additional $16 million will go for station improvements and completion of the computerized reservations and ticketing system, Lewis said.

AMTRAK AT TWO

The front end of 2975 showing the headlights on the short hood despite the fact that the Mars lights, an SP tradition, have been deleted and the space between the number boards blank. All six units will call Colton home.

Getting a shakedown a few days after arriving at Colton, the units were filling various switching functions. A three unit set was working a transfer cut to the old Colton Yard, a fourth was flat switching and 2975 and 2973 had just finished making up a train for the Palmdale Cutoff.

NEW POWER FOR A NEW YARD

Gliding through the smog at Colton Tower, units 2971, 2976 and 2974 move a long cut of cars just east of the new yard. Long a trainwatcher's favorite, Colton Tower protects crossing used by Southern Pacific, Santa Fe and Union Pacific.

Traditionally, Southern Pacific diesel hump engines have come from the ranks of road units downgraded and refitted for the tedious job of pushing cars over the hump at a steady, monotonous pace.

Indeed, the road's only three Alco RSD15's work the Eugene hump, SD7's keep Los Angeles busy and nine year old Centuries rule at Houston. But occasionally tradition and rules are to be broken, especially when power is needed to work in a brand new yard. With that being the case, say hello to SP's six recently delivered SD38-2's, built to work the hump and heavy transfer cuts at the new Colton, California yard, which was officially dedicated last July 19th.

Weighing in at 416,000 pounds, the 2000 horsepower units are teamed up with slugs, another first for Southern Pacific, rebuilt from Alco Century units, by Railway Supply Company of Montgomery, Alabama.

The units, 2971-2976, will have their work cut out for them as the new yard was built to facilitate freight bypassing the Los Angeles area and relieve pressure on LA's already overflowing Taylor Yard complex.

All eyes of the Delaware and Hudson of today are on the thundering D&H of yesterday as 302 and train picks up speed out of Port Henry, New York.

HAPPY BIRTHDAY DELAWARE AND HUDSON, YOU'RE 150 YEARS YOUNG!

JOIN US AND THE D&H FOR A FIRST-CLASS REMEMBRANCE OF YESTERDAY.

PHOTOS BY KENNETH INGMANSON EXCEPT WHERE NOTED

With an impending storm threatening, northbound 302 pulls the seemingly endless procession of passengers cars through Oresden, New York. Isn't this 1944 and a war swollen extra section?

Patiently awaiting her time on the mainline, 302 and special share trackside space at Canadian Pacific's Windsor station in Montreal with D&H's exhibition train.

If you were 150 years old, what would you do for a birthday party to celebrate? Perhaps you'd look back at your past years and, finding something of interest in your more colorful days, dust it off, polish it up and invite your friends. That's exactly what the Delaware and Hudson decided to do for two days last April 28th and 29th.

Forget the fact that under the cosmetic facelift, 4-8-4 No. 302 is ex-Reading No. 2102 and Pacific No. 653 is in reality former Canadian Pacific 4-6-2 No. 1278. Just read the lettering on the tenders, 302's wide firebox and the elephant ears. Put out of your mind that the Pullman Company is no more, the Twentieth Century Limited took its last trip on

With large quantities of black smoke storming out of her stack, 302 storms past photographer Ingmanson just north of Cooperville, N.Y.

Steam quietly hissing from her fat boiler, 302 and consist take it easy at Windsor station in Montreal after the northbound run from Albany on the evening of April 28th. J. Sandilands photo.

Putting it all together for a photo run-by, 653 and 302 blast by southbound at Fort Ann, New York. Even a threatening storm could not dampen the spirits of the day.

Just south of Whitehall, New York, the steam duo pick 'em up and put 'em down in style. Imagine the reaction of local tracksiders who were unaware of the Anniversary train.

653
653

Waiting to take her place and show her stuff, Pacific 653 watches as 302 and train arrive from Montreal at Whitehall, N.Y. on April 29th. J. Sandilands photo.

Wonder what the local farmers of Napierville, Quebec were thinking as the D&H anniversary special blasted by?

the "The Waterlevel Route" and the words "steam engine" are synonymous with tourist line.

Go back to the salad days of railroading when any passenger train worth mentioning ran in two or more sections, when passenger station meant Grand Central, locals were a dime a dozen and those same two words, "steam engine" meant the propulsion that powered the trains we liked to ride and watch, from Baltimore and Ohio's 0-4-OT's to Big Boys and Alleghenies.

So thank you Delaware and Hudson. Thank you for bringing back mainline steam, just once more, and thank you for having the kind of management to bring it off in the grand style that you did. Oh yes, Happy Birthday.

653 has just been added on in this scene a little north of Port Henry as the two elephant eared steamers make sure everyone knows they're firmly in command.

Crossing the mighty Hudson River southbound at Fort Edward, N.Y., the double-headed special makes for Albany. 653 teamed with 302 on the southbound run from Whitehall to Albany and the northbound run from Whitehall to Rouses Point.

COLLECTORS

With this issue RAIL CLASSICS initiates a new department relating to railroad memorabilia. "Collector's Notebook" will feature articles on such collectibles as timetables, passes and tickets, dining car china, silver, hardware and period railroad advertising in future installments. Author Langley has an extensive personal collection and will no doubt call on other authorities for future columns. Material and correspondence for this section should be directed to Al Langley, Rt. 1, Box 64-A, North Augusta, South Carolina 29841.

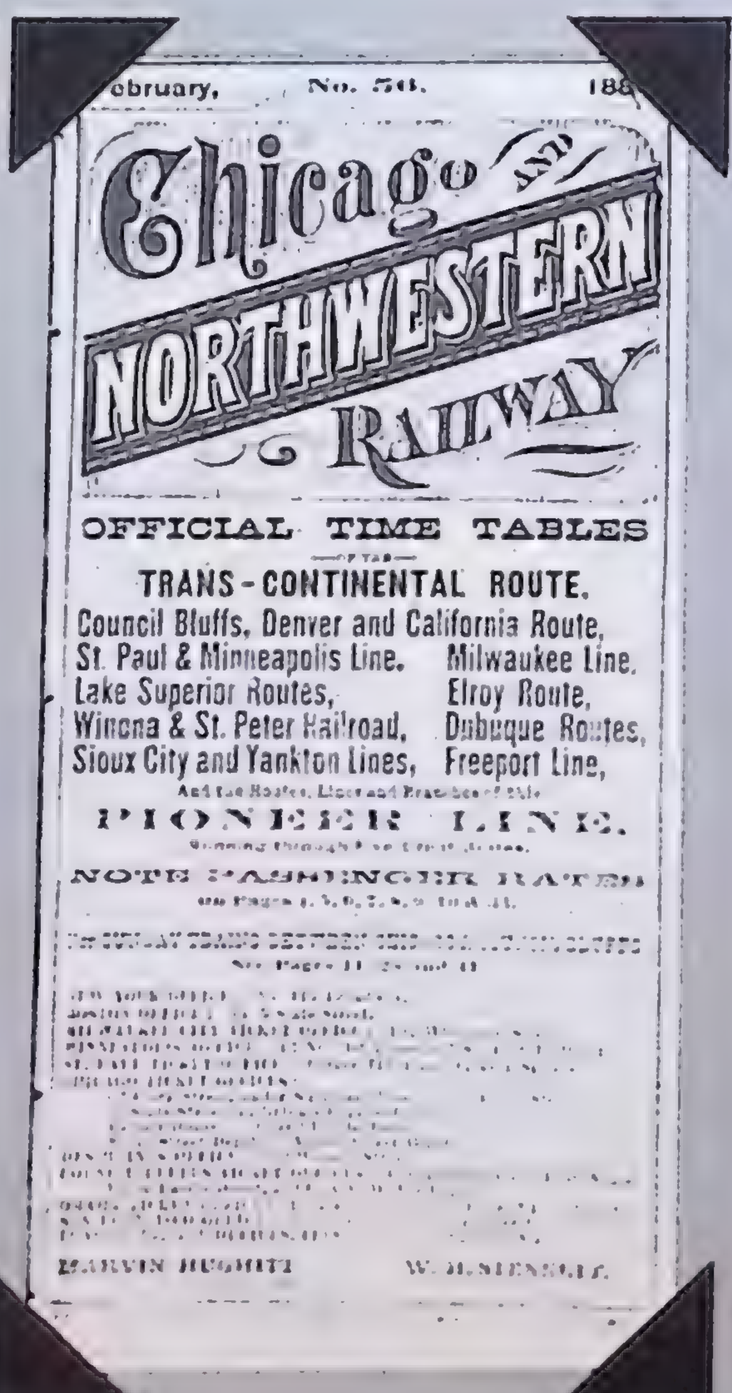
Imagine, if you will, setting on the rear platform of the **Carolina Special,** blasting its way up towering Saluda Mountain with a massive 2-10-2 pushing hard against the brass rail and a big mountain type talking it up on the point. Or reminisce to a snowy Christmas eve on the **20th Century** and a fleeting glimpse of Bear Mountain Bridge from the window of your sleeper or maybe it was the beauty of the Feather River Canyon from the domes of the "C.Z."

Indeed, visions of eras past. But, visions that can be relived today by those nostalgics who preserve those various and sundry artifacts collectively called "Railroadiana." By definition, anything reminiscent of railroads, past, present and yet to come. Today, spurned by the decline of passenger service, abandonments and mergers, virtually every railfan collects something and to this end this column is dedicated. Beginning with this issue we shall examine these fertile fields of rail antiquity with future issues detailing the specifics of the various facits of railroadiana.

Collectibles run from the finest of heavy dining car silverplate and china to tickets, passes, timetables, advertising materials, lanterns, headlights, whistles, bells, builder's plate and even spike and date nails used to mark crossties. So, for a beginning let's talk about timetables.

No doubt this segment of collectors has the largest following other than the railfan shutter bugs. Basically, railroad and traction timetables can be divided into two categories, public issues and operating or em-

THE DOUBLE TRACK
FLORIDA EAST COAST RAILWAY
NEW DIESEL-ELECTRIC
Streamlined trains
SERVING THE ENTIRE EAST COAST OF FLORIDA
JACKSONVILLE-MIAMI
TIME TABLES
CORRECTED TO NOVEMBER 1, 1939
Including Tentative Winter Schedules
SUBJECT TO CHANGE WITHOUT NOTICE
W. E. KEHAN, Jr., and S. M. LOFTIN, Receivers
J. D. RANNER, General Passenger Agent



BY AL LANGLEY

NOTEBOOK

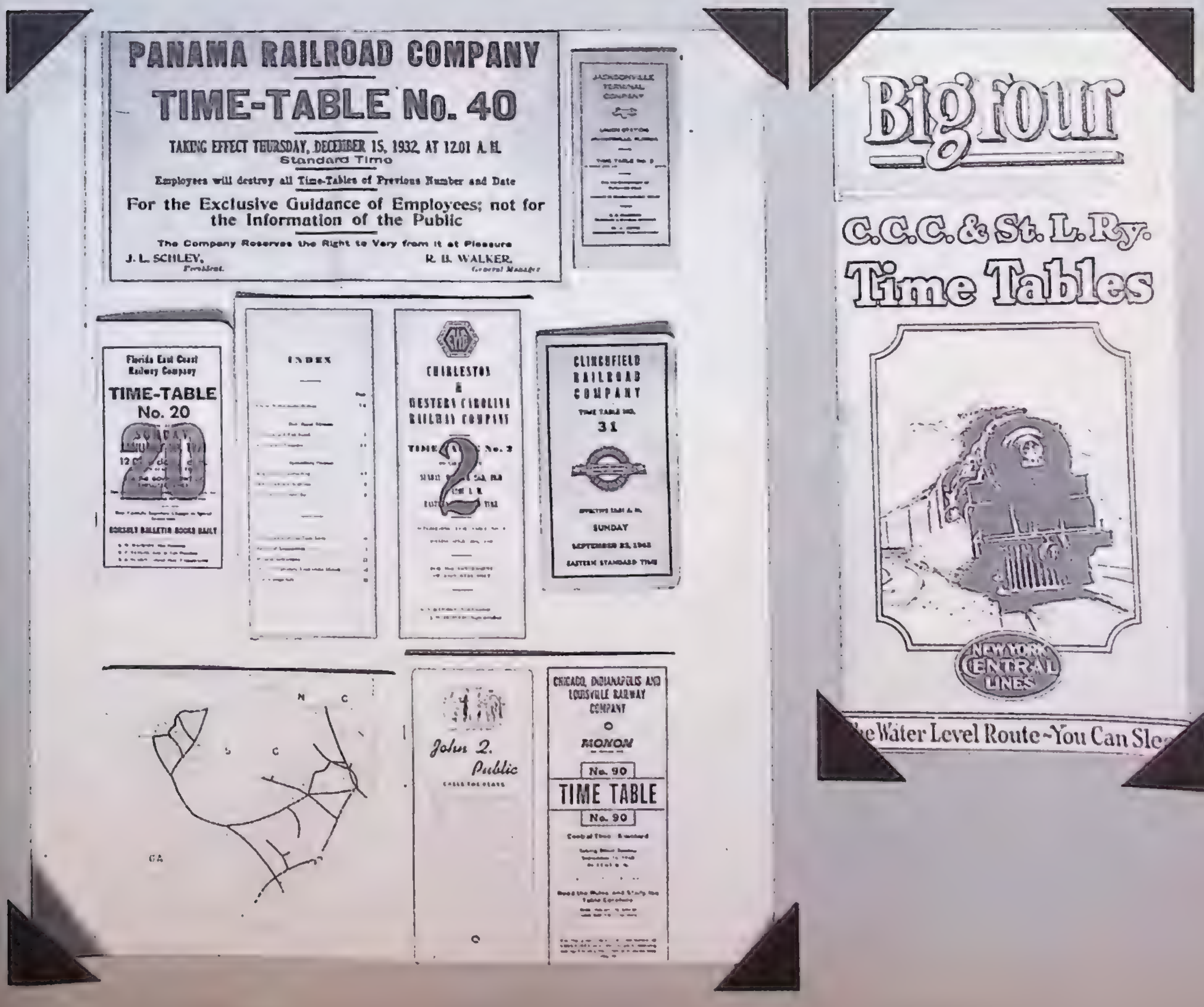
ployee timetables. Public timetables are those that were once common to every depot and hotel rack and with their classic ads, colorful displays and maps, are today sought in nooks and crannys of old depots and railway offices. On the other hand, operating timetables, most of which bear the standard, "For The Government Of Employees Only," are more detailed accounts of the operations of a railroad without the fanfare of the public relations department.

It is generally accepted that the first public timetable came into existence with the announcement of regular scheduled passenger service via the South Carolina Canal and Rail Road Company on December 25, 1830. Although the first journey of the fabled "Best Friend Of Charleston" was a brief one, soon the new fangled passenger train gained popularity and with it the need to advise the public of time and service.

In keeping with the times, timetables of the 1800's boasted fine wood cuts with much attention being given to detailed engravings of the steam cars. Indeed, ornateness remained until the coming of the vestbule limiteds, electric lighting and World War I. With the advent of government control under the United States Railroad Administration, simplification began to evolve with many timetables carrying both the USRA and the road over which the service operated banners on very plain folders.

After the "Great War," air conditioning became the vogue of timetable advertising along with streamlined steam and internal combustion flyers. But, World War II shattered passenger progress and soon the timetable racks were filled with red white and blue and "V for Victory" folders. Of all the periods of public timetable production perhaps this was the finest hour. Many roads frankly stated "G. I. Joe Comes First —Don't Ride Our Trains Unless Necessary." Such ad classics as the C&O's "Lower 9 Has Gone To War" with the famous Chessie kitten bedded down beneath a sleeping soldier's berth or the New Haven's "Kid in Upper 4" dominated the space once used to promote trains.

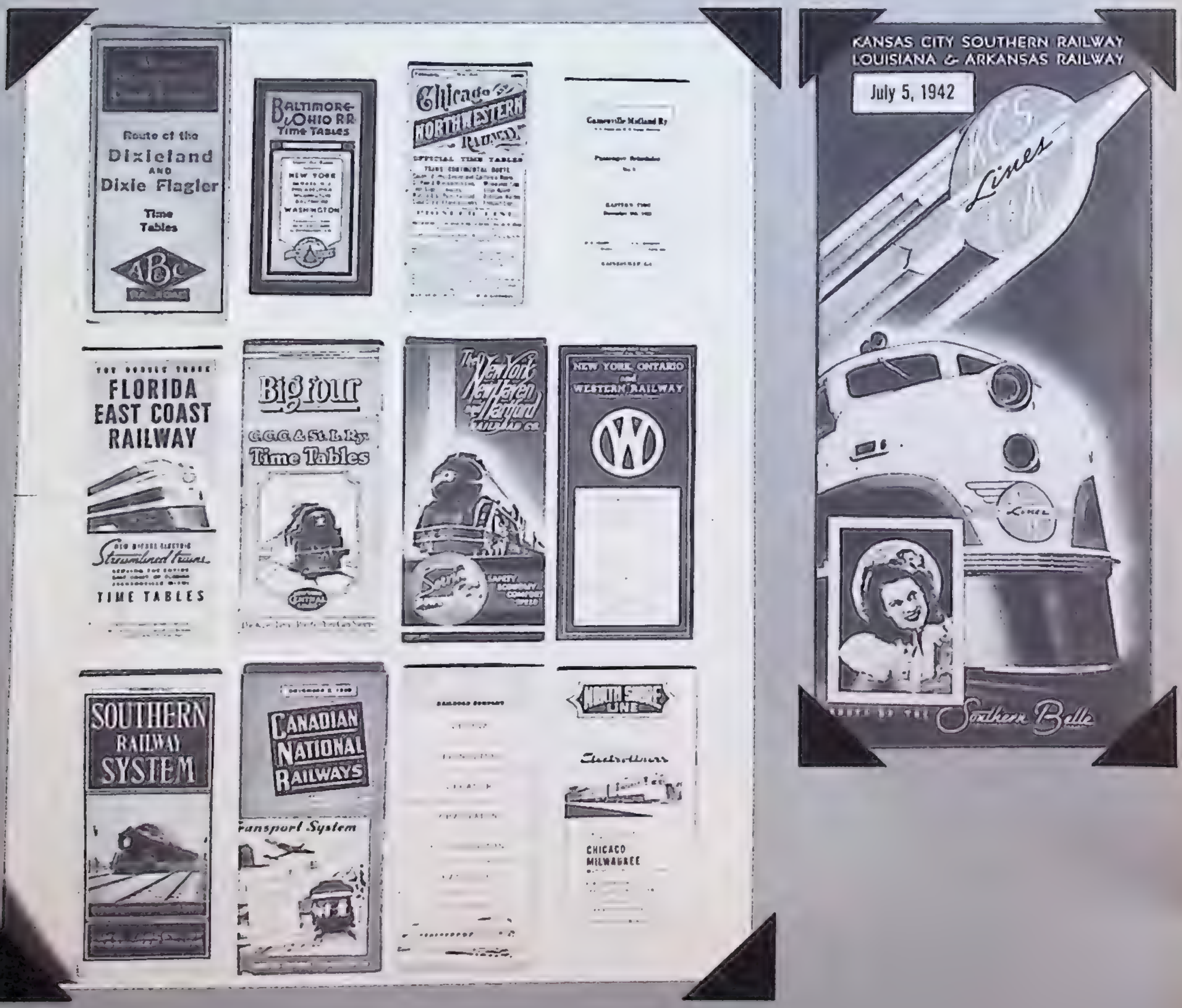
With the cessation of hostilities, timetables again began to proclaim the splendors of new streamliners. The automobile however had already began to take its toll and with such abandonments as the New York, On-


PANAMA RAILROAD COMPANY
TIME-TABLE No. 40
TAKING EFFECT THURSDAY, DECEMBER 15, 1932, AT 12.01 A. M.
Standard Time
Employees will destroy all Time-Tables of Previous Number and Date
For the Exclusive Guidance of Employees; not for the Information of the Public
The Company Reserves the Right to Vary from it at Pleasure
J. L. SCHLEY, President.
R. H. WALKER, General Manager
Florida East Coast Railway Company
TIME-TABLE No. 20
SUNDAY
INDEX
CHARLESTON & WESTERN CAROLINA RAILWAY COMPANY
CLINCHFIELD RAILROAD COMPANY
TIME TABLE NO. 31
SUNDAY
SEPTEMBER 25, 1949
EASTERN STANDARD TIME
N C
S C
GA
John Q. Public
CHICAGO, INDIANAPOLIS AND LOUISVILLE RAILWAY COMPANY
MONON
No. 90
TIME TABLE
No. 90
Big Four
C.C.C. & St. L. Ry.
Time Tables
NEW YORK CENTRAL LINES
The Water Level Route - You Can Sle

tario & Western and the Rutland as well as the unprecedented mergers of Penn Central, S.C.L. and Burlington Northern, the beginning timetable collector had a rare opportunity to have a collection of the first and last. Of course, the coming of Amtrak left the number of public issues few and far between but if you're a beginner don't be dismayed. Amtrak issues a number of systems and condensed regional schedules each year (some with notable collectible errors) and non-Amtrak lines such as Rio Grande, Rock Island and Southern as well as our Canadian neighbors still maintain their individuality.

Through the years, many lines issued special public timetables for such events as expositions and the like. The Toronto Hamilton & Buffalo's commemorative of the 1953 coronation and the like are both beautiful, unusual and welcome editions to any collection. Some railroads, the Santa Fe of note, issued special public issues known as "Agent Editions" which contained special fare and routing details and the Missouri Pacific's passenger department even went to the extreme of personally imprinting the names of off-line agents on special timetables to encourage favorable routing.

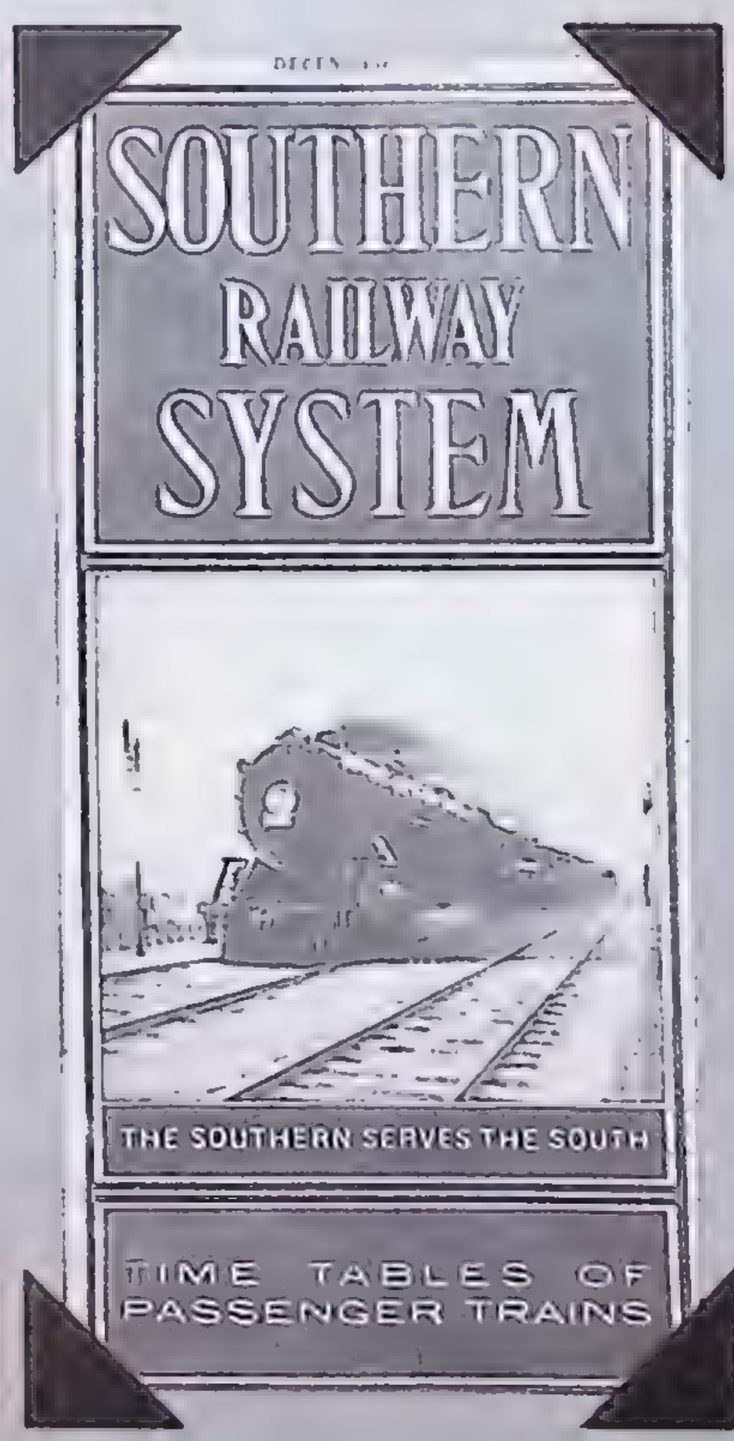
Referring to the collection of employee timetables, larger railroads usually issue these according to divisions and/or regions. These timetables are a very important part of the working of a railroad as they designate train classes and superiority and each employee in train service is required to have a copy on his person. Most lines detail times of trains at various points which can be altered only by the dispatcher. However, on C.T.C. controlled lines with dense traffic, many times these



"timetables" are actually only books of special instructions and lists of stations with no times shown for any train. As one New York Central conductor once said, "I go down to Grand Central Terminal, get on a train and when the signal turns green, we go to Albany." The absence of printed times reduces cost of reprinting these thick employee timetables with each schedule change

Although neither truly an employee nor public timetable, so called "Official Guides" are also a part of most timetable collections. These books contain voluminous schedules of all major railroads including many freight only lines. Although several different "Guides" have been published over the years (Appleton's Railway Guide "Travellers Railway Guide," "Snows Pathfinder Railway Guide," etc.), the best known is the National Railway Publication Company's "The Official Guide To The Railways." This publication was first produced in 1868 and early editions bring fantastic prices on the timetable market. The publisher, of late, has produced several fine reprints of early volumes which have proved most popular.

But enough of the mechanics of collecting timetables. Why not join in the fun. We sincerely recommend the National Association of Timetable Collectors (7850 South Kenneth St., Chicago, Illinois 60652) which offers news of newly issued timetables and reprints of various collector's editions in its monthly newsletter. Also, whether beginner or experienced collector, we suggest "Collecting Railroad and Trolley Timetables as a Hobby" by Edward F. Gardner as a good bible for buying and selling your treasures. Until next issue . . . Happy Collecting!



A TRIBUTE TO STEAM, SOUTHERN CALIFORNIA STYLE

Visitors to the Southern California Chapter of the R&LHS are treated to the sight of the meticulously restored Arcadia station and the collection of steamers on the compact but well organized exhibit.

Perhaps the first impression you get when standing in front of the 4-8-8-4 is wow! What a machine! From its silvered smokebox and spotless valve gear to the shine on the centipede tender, it doesn't take much imagination to see her sitting hot on the ready track waiting for another go at Union Pacific's fabled Sherman Hill.

This is 4-12-2 #9000 looked when in service for the Union Pacific. She may have been in good shape then, but look at her now, displayed at Pomona, California, in superb condition.

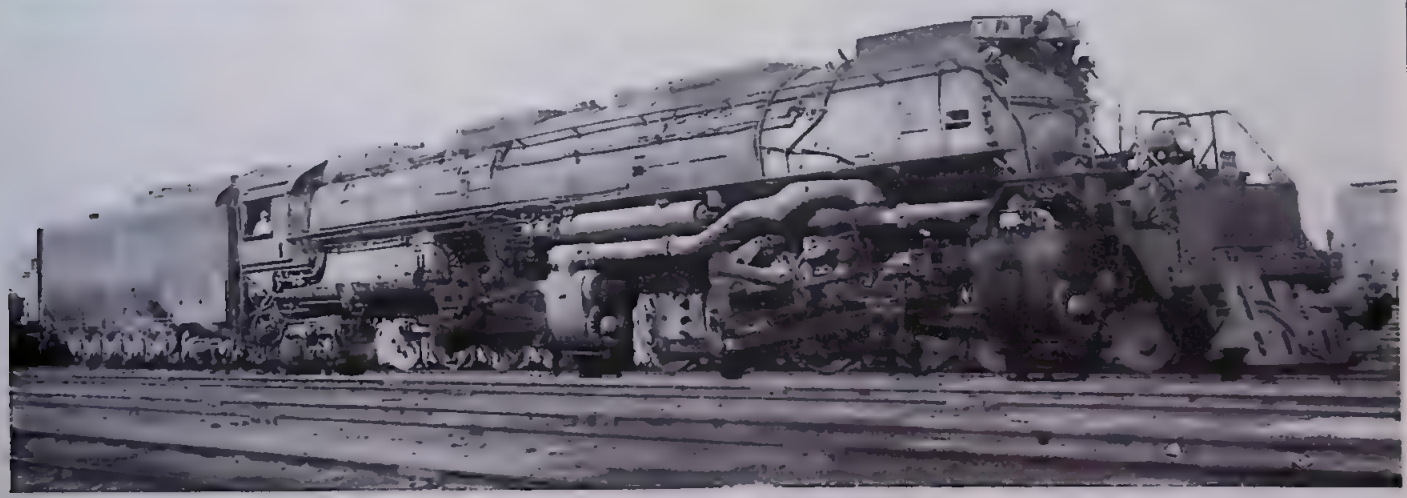
I wasn't looking at some well worn photograph, or conjuring up memories from long ago, I was face to face with Big Boy 4014 at the Los Angeles County Fair. The Los Angeles Fair? What's a steam engine doing at a fair, especially a gigantic articulated. And if it is at some public place like a fair, what shape could it possible be in?

The answer is it's in great shape, as the Fair is also the home for the Southern California Chapter of the Railway and Locomotive Historical Society, Inc., and Big Boy No. 4014 is only one of a myriad of equipment kept in tip-top shape by the Chapter.

The Southern California Chapter's efforts began a year after their inception with the acquisition of a three truck Climax from Fruit Growers Supply Company in 1954. Despite

WHAT ONE GROUP OF PEOPLE CAN DO WITH A LOT OF PATIENCE AND HARD WORK.

BY MILES MORAN



Looking as good as the day she left Alco, Union Pacific Big Boy #4014 is the largest steamer on display at the Fair. Would it take too much imagination to see her in action again like the in service photo shows?

One reason for the beautiful shape of the display locos and cars is the dedication of its members, such as these spray painted Hudson #3450 after sandblasting.

Its company name, Climax No. 3 didn't leisurely shove fruit laden reefers around loading areas, but worked in northern California bringing down logs to be made into packing crates. While diesels were busy catching up with steamers, fiberboard

Would you believe that Santa Fe Hudson #3450 has over two and one half MILLION miles under her belt? The 4-6-4 was the second steamer acquired. Compare the displayed 3450 to the photo of when she was working for a living.

Santa Fe caboose #1314 on the outside and inside. Lacking only a fire in the potbelly stove and a conductor taking care of the rear end business, the caboose looks ready for mainline service.

Reputed to be the oldest locomotive in daily service in the United States when retired Outer Harbor Terminal Railway #2 now rests with her big brothers at Pomona. The Schenectady 0-6-0 was outshopped in 1887.

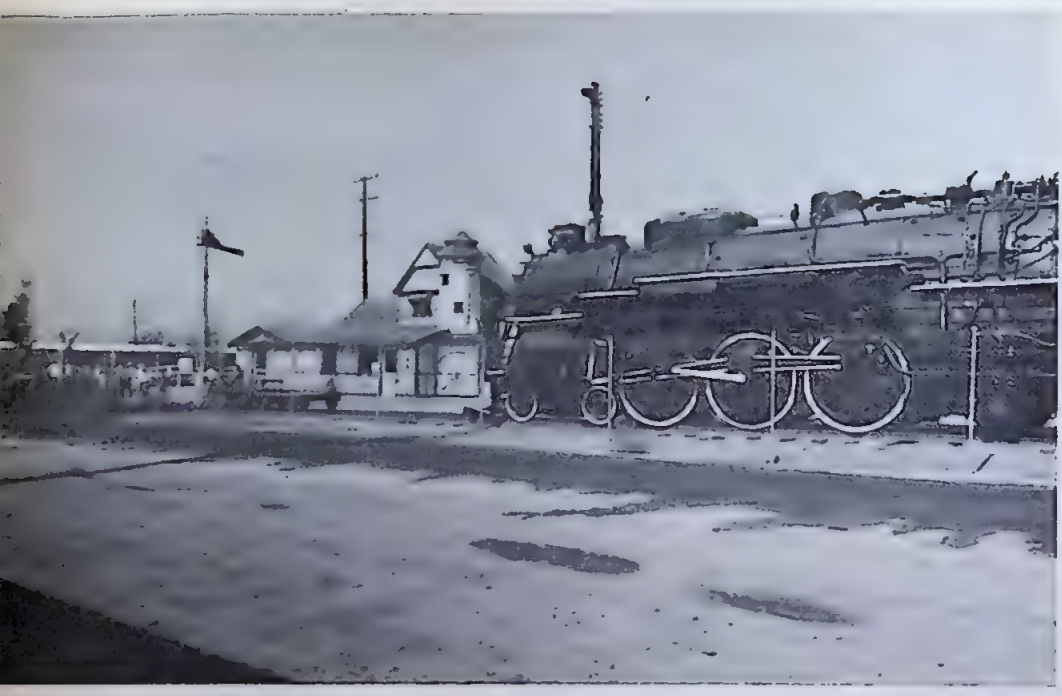
proved to be equal to wood for shipping citrus fruit, and No. 3 found itself out a job. Thanks to Fruit Growers Supply, the Climax was donated for display instead of ending up in a deadline at a scrapyard.

The mountain climber was alone for but a year at Pomona, site of the Los Angeles Fair, when the Santa Fe donated 4-6-4 Hudson No. 3450, looking as clean and as cared for as the day it left Baldwin's Eddystone erection bay in 1927, despite the 2½ million miles that had been rolled up in its 28 years of service hauling the best of Santa Fe's varnish.

4-10-2 No. 5021 came a few months later from the Southern Pacific. Like the 3450 before her, the steamer was outshopped to tip-top condition before being presented to the society. In 1956, the Union Pacific donated 4-12-2 No. 9000, the first of the line's massive Union Pacific type steamers.

Smaller power was not forgotten either, and the group managed to acquire Outer Harbor Terminal 0-6-0 No. 2 after it was retired from switching the Los Angeles docks in 1955, followed by a narrow gauge acquisition, United States Potash consolidation No. 3. The outside frame lokie finished her days on the U. S. Potash's private, ore-hauling railroad at Carlsbad, New Mexico, before finding a home in Pomona, thanks to United States Borax and Chemical, the new name for U. S. Potash.

But trains and railroading is more than just motive power and the resourceful membership not only managed to have the Santa Fe donate a wooden caboose, but an entire station! Built in 1895, Santa Fe's Arcadia



station adds just the right touch with its classic gingerbread design as it greets visitors entering the display area.

To insure that the equipment stays in its A-1 condition, a chain link fence surrounding the area helps, but the real reason for that immaculate condition of the various pieces of equipment is the members themselves. All maintenance, painting, rebuilding and polishing are chores

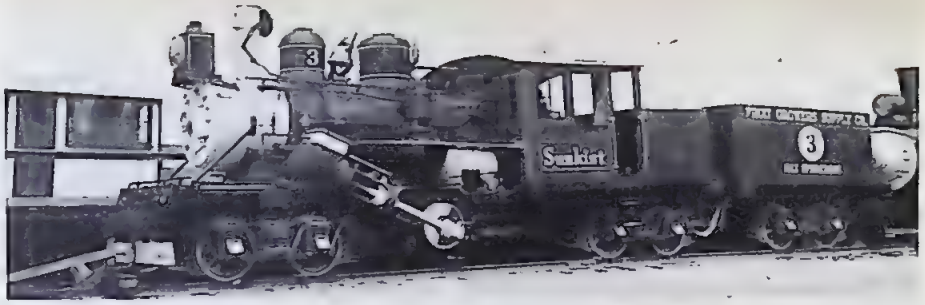
Another view of the compound, with Hudson #3450 by the fence and the gingerbread Arcadia station in the foreground. The group has also remembered to include small details like handcars, a semaphore and crossing signs.

Not displayed at the Fair, Southern Pacific 4-10-2 #5021 presently resides with the Santa Fe at San Bernardino. Like all equipment on display, the engine is in excellent condition.

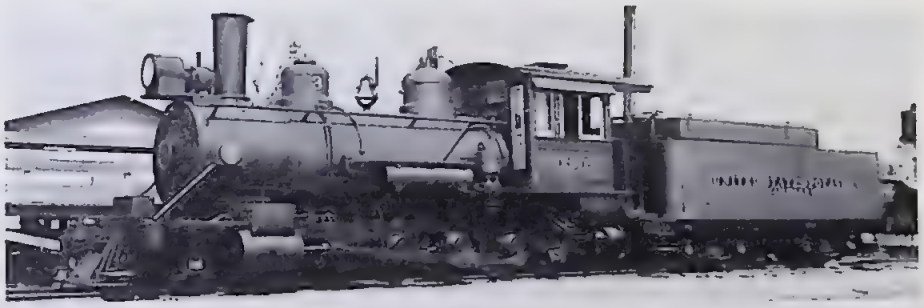
handled by the members on their own time and at their own expense.

To keep the display going takes organization, and that's just what the Southern California Chapter has, complete with member elected board of directors and a classification as a California corporation and as a non-profit organization. It's this sort of teamwork that enabled the chapter to fire up No. 5021, currently stored by the Santa Fe in San Bernardino.

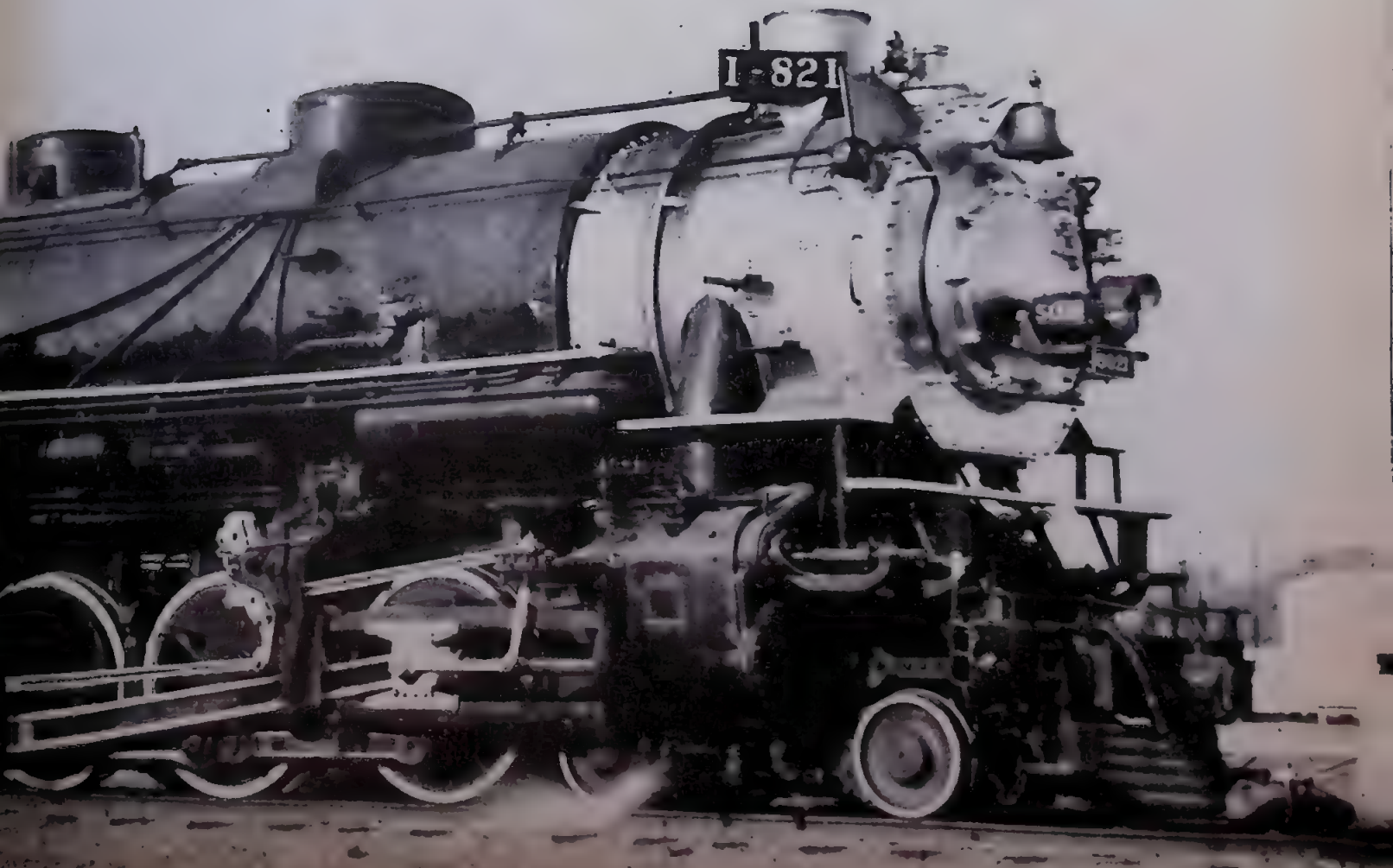
Teamwork, dedication, and a love of railroading is what makes the exhibit and chapter run smoothly, and the trip on Interstate 10 to Pomona well worth the drive. Just follow the signs to the Los Angeles Fair, you'll swear from a distance the steamers are ready to roll.



Here's the locomotive that started it all for the Chapter in 1954. The three truck Climax was out of a job when fiberboard replaced the wooden box crates for fruit, that was her responsibility to get down the mountain.



The only outside frame locomotive display at the Fair is United States Potash consolidation #4, a narrow gauge steamer that began its days working for the now abandoned Morenci Southern in Arizona.



BART

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BART
EXIT

BART

scrubbers by the end of August.

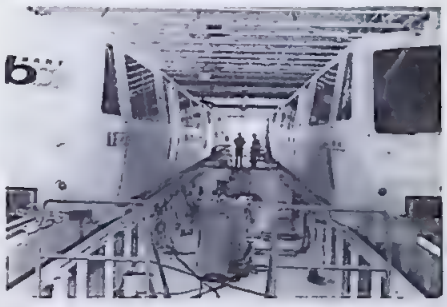
Kramer also believes addition of some computer circuitry over the next two to three years at a total cost of $500,000 will replace the scrubbers, which are noisy and difficult to maintain.

Trainmen's consoles also are being equipped with lights that will indicate what speed command the train is receiving. This idea had been discussed long before the Fremont accident and provision was made in the car design for it. Now, the trainman will compare the command with his actual speed and automatic equipment will stop the train if the command is disobeyed. However, top speed in manual operation will be 25 mph.

There have been reliability problems with the automatic control circuits. At switches, the equipment sometimes sees a train that isn't there. This results in a "zero" command and the train must be operated manually through the switch. But, because of the automatic design, if the switch is not spiked into position (and many are, at this writing), the man in the cab is not certain the switch is safely locked in position and won't move under the train. So, cranks used to manually throw switches must be inserted in the switch machine to manually lock the switch in position. Kramer believes changes in circuitry will alleviate the problem and the Oliver Panel recommended lights or other equipment be installed to inform the trainman the route is safely locked.

When Rohr was awarded the car

(Please turn page)



The busiest spot on the railroad is Hayward Main Shop where both trouble-plagued revenue cars are repaired and new cars from Rohr Industries Inc. are received and put through acceptance tests. The box-like unit in the pit is an electronic tester. Shops located at Concord and Richmond handle routine, day-to-day minor repairs.

RIDING TIPS FOR RAILFANS

Don't come to San Francisco to ride BART. At this writing, only the three legs radiating from Oakland to Richmond, Fremont and Concord are running.

And don't plan to ride on weekends or in the evening.

Because the tracks are needed for car acceptance testing and train control work, BART runs only between about 5 a.m. until 8 p.m. Mondays through Fridays. You can't ride on Saturdays or Sundays.

Present plans call for service to begin into San Francisco late in September 1973. Saturday service may begin late in 1973. The railroad will not be running seven days a week, 20 hours a day until sometime in 1974.

Subway stations are bright and quite suitable for photography, especially in black and white. Good results are possible with Tri-X or similar fast film. Trains usually remain in stations about 20 seconds and there is considerable movement of passengers, so you'll really have to be an expert with color film, which is generally slower than black and white.

The ends of elevated station platforms are excellent vantage points. The right of way is completely fenced and persons are prohibited from the track area. Facilities are patrolled by BART police. Shops and other maintenance facilities are not open to the public. The automatic train control center also is closed, but groups may see it from a visitor gallery if arrangements are made in advance with the department of public relations. Films and related educational material also are available from the public relations office, 800 Madison St., Oakland, CA 94604.

The MacArthur station is especially busy, with trains on the Richmond-Oakland-Fremont line connecting with trains shuttling to Concord. The Concord line is quite scenic and features a 3.8-mile-long tunnel, the fifth longest railway tunnel in the United States. Trains run at 80 mph in the tunnel and also between Ashby and Berkeley stations, making that segment the world's fastest subway. Those visiting San Francisco (which has five streetcar lines as well as cable cars and electric trolley buses and the Southern Pacific diesel commuter line to San Jose) can easily reach the BART 12th Street City Center station in Oakland via the AC Transit route A bus that leaves at frequent intervals from the Transbay Transit Terminal in San Francisco at First and Mission streets. The Terminal is served by all five Municipal Railway streetcar lines.

This is what rapid transit is all about: a two-car train slows for the Lafayette station on the Concord line. The route is in the median of often clogged Highway 24 freeway.

An open plaza, bright lighting and a skylight give Lake Merritt subway station anything but an "underground" feeling. Towering above the station is BART's six-story administration building.

Missouri Pacific 4-8-2 "Sunshine Special"

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BART

contract in 1969, the firm began producing 10 prototype cars to be subjected to severe testing. It was hoped that many bugs would be found and corrected before the big new Chula Vista factory began producing a car each weekday. Many problems were found and corrected and the car body structure was subjected to an unscheduled test early one morning at Coliseum station. A northbound test train, being operated at high speed manually because the automatic controls were not yet installed, rammed a train standing in the station, causing extensive damage to the fiberglass noses of the prototype cars, and injuring the trainman. However, there was almost no damage to the structure surrounding the passenger section or to the passenger section of the car interior. Not one window was broken in the passenger area!

Rohr has been plagued by labor problems and has been accused of not imposing strict enough quality controls on its own production or on its sub-suppliers. So far, no basic problems have been found. The cars carried crush loads to the World Series. Although they seat but 72 passengers (and BART promises a seat for every rider), each car safely transported as many as 200 passengers to the baseball games.

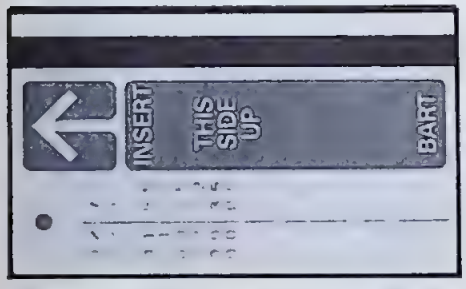
Cars initially were plagued by flat wheels. Brakes worked, but not always smoothly, and electrical circuits both for the disc friction brakes and the electric dynamic brakes were troublesome, causing jerks.

Brakes would lock or overheat. All of the car controls were temporarily modified so that doors open manually rather than automatically. This was because doors were opening while the train was operating, sometimes at a top speed of 80 mph. Modifications will correct the problem, Stokes said. On some cars, the doors won't open!

Another problem was the emergency "Stop" button, which would stop the train, but refuse to "reset" so automatic operation could resume. Motor bearings froze and trains stalled. The problem was diagnosed as inadequate lubrication. Interior lighting is troublesome, there were problems with hydraulic pressure for the friction brakes, valves that adjust the air suspension and keep the cars level was balky, some solid state components in the propulsion system acted up, train radios went dead, the public address system was

inaudible upon occasion, and antennas that transmit train identification and route to the automatic equip-

BART uses magnetized tickets sold in five-cent amounts from 30 cents to $20. The tickets are used for entry and exit and the fare is automatically deducted and the ticket returned. Karen Emerson, who commutes from Orinda to Oakland, enters through the 12th Street station "fare gates" on her way home.



ment would break off. This, typically, made trains run through the stations rather than stop, or stop at switches because the train was not transmitting is destination to the switch!

Delays of up to one hour in the rush period are unusual, but not unheard of. As many as seven of 12 trains were malfunctioning for various reasons and being removed from the service in a single day in April 1973.

But Stokes and Kramer insist the San Francisco line through the 3.6-mile-long tube beneath San Francisco Bay will open in September.

It does seem that BART is gaining on the problem and that, indeed, a new and hopefully grand new era in public transportation is evolving in the Bay Area. Hopefully, the idea will spread and the 1970's and 1980's will be America's "Golden Age of Subways."

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TRONA

(Text continued from page 47)

who was paid to connect Searles and Trona.

Bending progress in a reverse manner, the Baldwins in bowing off-stage have been second generation power. Second in the sense they represented a follow on to this short line's original roster of two 2-8-0's and an ex-U. P. 2700 series Mike that was added in the mid-30's.

Then, too, there was an era, it ended in 1937, when Trona Ry. was catering to first class trade, the halcyon days when small boilered steamers latched onto a couple of steel coaches and chuffed off across the parched acres to S. P. land and the big city lights down south in L. A. Pavement was mighty skimpy east of the altitude conscious Sierra Nevadas which line the far horizon of Trona Ry.'s borders. Chemical plants were always hiring, as the list of boomers passing through the hiring office varied directly with the temperature and some means was necessary for those coming and those going.

Buses eventually took over but many an old timer recalls the short, but perspiring downhill ride in open windowed cars, simmering heat waves perhaps making Searles Lake more than just a dry mineral patch, a momentary illusion that swiftly faded.

Very few had heard of a diesel in those days, least of all the heat treated enginemen constantly wiping moist brows with a rumpled 'kerchief. This antiquated vistage will be the center-cab's lot in a generation or so.

However, today they're still a current event as working faithfully, if not hurriedly uphill the three Eddystone offspring chase the twilight of a fading day and of an existence. Speed often drops below 20 mph as uphill angles fluctuate in typical desert fashion. The usual run to Searles with 2500 tons is about two hours for the 30 mile stint, a gauge that explains a profile map. Approximately 85% by weight is outbound, 15% inbound so the sweat comes from uphill exertion.

Every so often the roadbed seeks altitude above the desert floor but mostly it meanders across moderate cuts and fills, with little if any contrast apparent. What unparalleled scene there is rests in the train. How often, recently, have center-cabs been pictured in daily service?

Rather appropriately, symbolically, train No. 1 approached Searles just as the sun was dropping below the

distant Sierras. The ridges were still flooded with a reddened mantle while the leading unit's headlight became more a marker in the cool semi-daylight of a late March date. Posed quietly on one leg of a wye, a four unit set of S. P. units idled till late evening and a return to Los Angeles.

In the gathering dusk the Trona units set about a half-hour of switching till at last, their ride consummated and the caboose swapped they faded off into the now settled night.

One more round trip was due, trains 3 and 4 had a mission to complete and then emptiness would befall Trona Ry. for a half a day. The numbers had fallen to nine and still counting.

Like an emotion packed movie with an epilogue sequence, the center-cab story doesn't conclude here. Temporarily at least, while the two AS616's are worked into tip-top condition that local needs require, the two brawny, vintage units are to be kept in switching duty. After that Baldwin's progeny will call it quits, many years after their originator took a path to corporate oblivion.

Final bookkeeping entry: Diesel locomotives No. 50 and No. 51 depreciated and paid off. It is to be noted that the credit side of the ledger was used.

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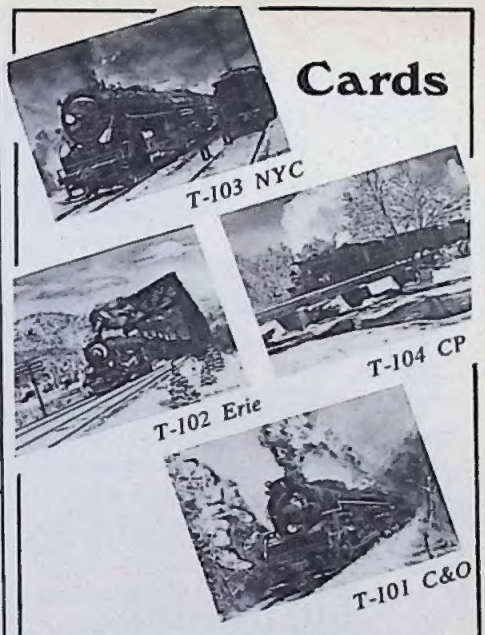

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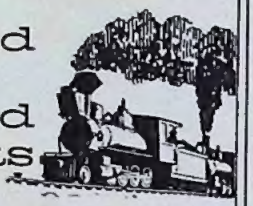

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RAIL MAIL

by William Clark, I'm sure has been awaited by many rail-photographers. For years now I have been experimenting with night rail photography with no guidelines. I have made many good shots and more than my share of bad ones, but it was all a part of the hobby. Unfortunately I did not record the time and settings as I made the shots, so I am glad to see that one rail photographer has taken night photography seriously and has taken time to share his findings.

During the past two years I have not been as active as with the merger of the SAL and the ACL, they have just about eliminated Raleigh as an engine terminal. Then, too, with the coming of Amtrak the passenger trains that were so plentiful through Raleigh have ceased to run with the exception of two. Even these two night passenger trains the chances are slim as they are not here long enough to experiment. The through freights change crews on the run thus eliminating chances to night photograph them. It has been very gratifying to get those good night shots that turned out as I had hoped. I've used color slides, color negative and b/w films.

Bill Clark is to be commended for his fine coverage of the subject and **Rail Classics** cited for its graphic presentation. This is just one more reason I have **Rail Classics** on my "must" reading list.

Wiley M. Bryan
Raleigh, North Carolina

HOOPING THOSE ORDERS

As a former agent-operator on the Southern Railway, I read with interest the comments made by Al Langley in your August 1973 issue concerning hooking or hooping train orders.

On the division I worked we "handed up" orders on a order hook by the use of twine. Old timers used to use so called "knuckle busters" or "hoops" and no doubt some referred to it as hooping orders. I would dare say the operator at Cajon "hooked" his orders the same way I "handed up" mine. Lingo varies from division to division and road to road on many of the job and situations in railroading. I know by experience. The purist term is the one used by the man who does the job.

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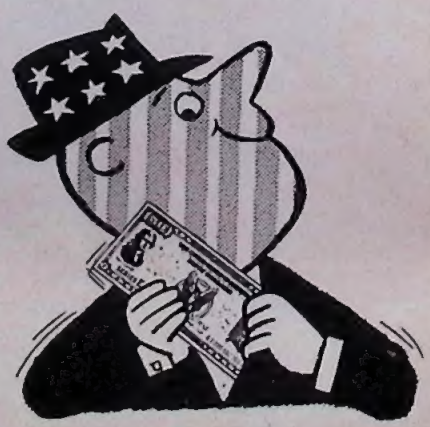

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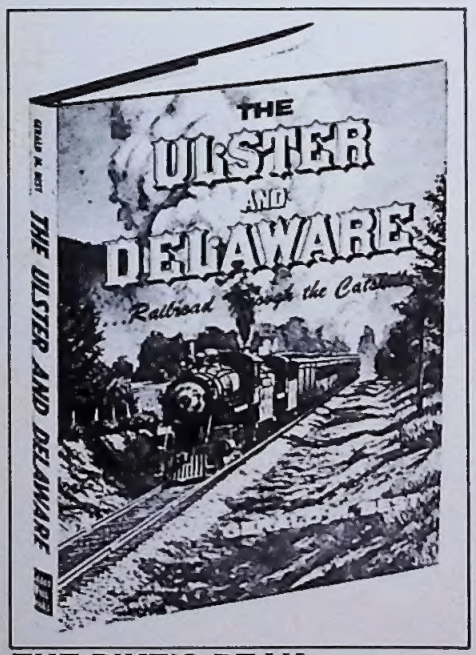

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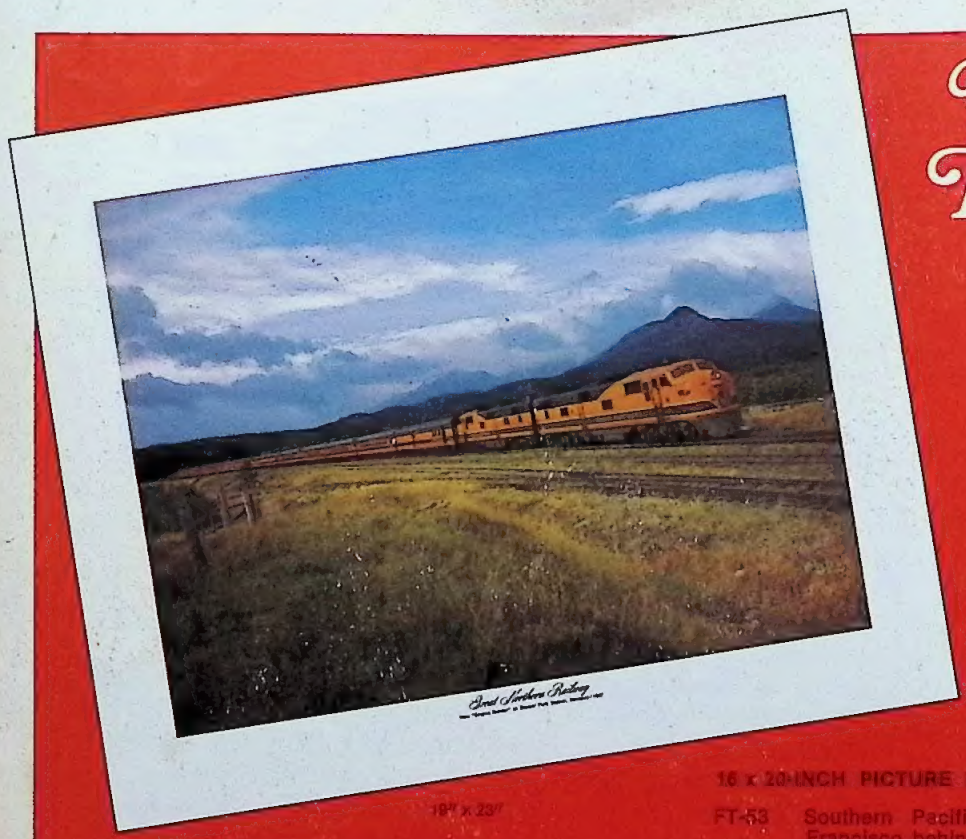

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